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A
COMPLETE
DICTIONARY
OF
DRY GOODS
AND
HISTORY
OF
SILK, COTTON, LINEN, WOOL
AND OTHER FIBROUS SUBSTANCES
INCLUDING A FULL EXPLANATION OF THE
MODERN PROCESSES OF
SPINNING, DYEING AND WEAVING

WITH AN APPENDIX CONTAINING
VARIOUS USEFUL TABLES.

By GEORGE S. COLE.



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THE FIRST WEB.

*To please the flesh a thousand arts contend,
The miser's heaps of gold, the figur'd vest,
The gem, the silk worm and the purple dye,
By toil acquir'd, promote no other end.*

PREFACE.

In presenting to the Dry Goods Trade its first Dictionary of textile fabrics the compiler feels confident that the time and labor devoted to making the work accurate and complete will commend it to the favorable consideration of everyone connected with the business. The objects held in view during its preparation were briefly these: 1. To give the proper definition and description of every woven fabric and manufactured article sold over Dry Goods or Clothing counters; 2. To note the peculiarities which distinguish a fabric, and by which it may be identified, and to give such facts in a handy and convenient form for reference; 3. To describe fully the method of weaving or manufacture; 4. To explain the origin of the names of all fabrics, and to clothe the dry bones of figures and statements with the literature of the subject; 5. To give the import duties under the new textile schedules on all goods that are imported, raw and manufactured.

No labor or expense has been spared to make the Dictionary serve the purposes for which it is designed; the statements and figures which are presented are given only on the faith of recognized authorities, and in reducing the chaos of particulars relating to the history of textile fabrics strict and careful attention has been paid to accuracy.

It is remarkable that in a country like ours, so greatly dependent upon its manufactures, that not even a classification of the kinds of our textile manufactures has ever been attempted, to say nothing of a systematic history of them. The only information otherwise obtainable on this subject has been brief notices and suggestions printed from time to time in various trade papers over the country, and in the ponderous encyclopædic works, whose trade articles when relieved of the heavy, obscuring folds of verbal drapery yield very little essence of information; so that unless the salesman or merchant is the owner of a set of Encyclopædias or a subscriber to a large number of papers he can at best

secure but a scant amount of information, and that unsatisfactory and meagre in detail. The idea of compiling in book form a complete and exhaustive Dictionary of Dry Goods originated with the undersigned, and therefore in the publication of this work, as far as regards the subject matter, it is not in any sense original, and no special claim is made to originality other than the manner in which it is put before the public.

If it will aid the beginner to more fully understand the essential points of his chosen occupation, or furnish the more experienced salesman with correct information upon subjects of which he is in ignorance, the hope that inspired the preparation of this volume will be fully realized.

G. S. C.

Explanations and Abbreviations.

Beam is the flanged roller on which the warp yarn is wound, in making ready for weaving.

Chain.—The warp in weaving.

Cop.—The conical ball of thread formed on the spindle of a spinning frame; also a tube upon which silk thread is sometimes wound, instead of being made into skeins.

Counts.—A system of indicating the fineness of yarn.

Fabric.—A woven or felted cloth of any material or style of weaving; anything produced by weaving or interlacing, distinctively called *textile fabric*.

Fell.—The edge of the fabric (in the loom) which has most recently been woven.

Fibre.—A thread or filament; a single natural filament of wool, silk, cotton etc. In a collective sense any animal or vegetable substance which can be separated into, or used to form, the threads for making textile fabrics.

Filling.—The woof or weft threads of a woven fabric.

Pick.—The insertion of a thread of weft, or filling.

Shed.—The opening made in the warp for the passage of the shuttle containing the weft.

Textile.—Woven, or capable of being woven; formed by weaving.

Warp.—The threads which are extended lengthwise in the loom and crossed by the filling or weft; sometimes called the chain, or ends.

Weft.—The woof or filling of a fabric; the threads that cross the warp from selvage to selvage.

Woof.—The threads that cross the warp in weaving; the weft; filling.

Yarn.—The thread of cotton, wool, silk, flax, hemp or other material spun and prepared for weaving.

Color is that quality or appearance of a fabric, which is perceived by the eye alone, independently of its form; a sensation peculiar to the organ of vision.

Pure Colors are those termed simple or primary, being red, yellow, blue, orange, violet, green and indigo.

Hue is the distinctive quality of a color, the respect in which colors may differ though they have the same luminosity and chroma. Thus scarlet and crimson differ in *hue*, but buff and yellow chiefly in chroma. The word hue is always applied to the modifications which it receives from the addition of a *smaller quantity* of another color.

Chroma is the degree of departure of a color-sensation from that of white or gray.

Tone of a color means the various modifications which that color in its greatest intensity, is capable of receiving from white (which lowers its tone) or black (which heightens it). In fewer words, it is the modification which any color is capable of receiving from the addition of black or white.

Tints are the colors considered as more or less bright by being modified by the addition of white.

Shade is any degree or variation of a color, as lighter or darker.

Tariff is the list of rates of duties established by Congress on imported goods.

Ad valorem is the duty, or tariff, on the net value of an invoice of goods. Ad valorem duties are levied according to the market value or worth of goods at the original place of shipment, as sworn to by the owner and verified by the custom appraisers.

Specific Duty is the duty, or tariff, on the number or quantity, as dozens or tons.

q. v.—*quod vide* (which see); that is, refer to word or subject which immediately precedes the abbreviation.

A
DICTIONARY
OF
DRY GOODS.

A

ABA.—A coarse woolen material woven of camel's hair or wool, in Syria, Arabia and neighboring countries. It is generally woven in bright colors. Also the name of an outer garment or covering made of the above, very simple in form, worn by the Arabs of the desert.

ABB WOOL in wool sorting is one of the two qualities known as *coarse* abb and *fine* abb; the lowest quality of wool.

ABNET.—Hebrew *abnet*, a belt. In Jewish antiquity a girdle of fine linen, worn by priests. In surgery a bandage resembling a priest's girdle.

ACCA.—From Acre, a city in Syria, whence it was first obtained. A rich figured silk fabric, decorated with gold, used in the 14th century.

ADULTERATION OF FABRICS.—Woolens have been for years past largely adulterated with refuse fibres called "shoddy" and "mungo." It is wonderful the manner in which this dust can be mixed with chemicals in order to give it sufficient tenuity for spinning. The practice is now more largely in vogue than ever, for there is hardly a piece of cheap cloth without it. Shoddy, as originally used, was merely the fluff or waste from the looms, but now consists of any kind of woolen rubbish, as old blankets, hose, clothing etc., pulled to pieces in a machine called the "devil." [SEE SHODDY.] There is yet another kind of refuse called "extract" which is employed for the same purpose. It consists of the wool obtained from the rags of mixed goods, that is, rags which have a cotton or linen warp. The cotton is destroyed by sulphuric acid, and the wool is left intact.

Calicoes and other cheap cotton goods are largely adulterated with size and china clay, the object being to give them increased weight and substance. Up to about twenty years ago the sizing of cotton goods was effected with a mixture of flour, paste and tallow, by which means the tenacity of the warp was increased and the friction of weaving was lessened. To affect this, 20 per cent of size was used; but in 1862, when on account of the war our cotton famine began to be felt, and the long-fibred cotton grew so scarce, it was found necessary to give tenacity to the warp threads made from *short* fibre by using more size. In this manner as much as from 50 to 90 per cent of size has got to be used, the greater part of it being china clay. Cheap calicoes and muslins are also largely impregnated with lime; a cloud of dust flies out of such fabrics when they are torn.

Silks are also made heavier and stouter by the incorporation of dye-stuffs used expressly for this purpose. These are called "weighted" or "loaded" silks. [See SILK.]

AIDA CANVAS is made of pure linen, and frequently called Java and Fancy Oatmeal. It is made in widths varying from 18 to 54 inches, in many different colors; also produced in woolen material. A cotton cloth of the same make is known by different names, such as Basket, Connaught, etc.

ALAMODE.—A thin glossy silk used for hoods and scarfs.

ALASKA is the name given to a variety of sandal-shaped overshoes having cloth uppers and rubber soles.

ALBATROSS dress goods properly are a soft fine bunting, and are also known by the various names of "Satin Moss," "Vicuna," (the stoutest make) "Snowflake," (which is fluked) "Antique Cloth" etc. It is of an irregular weave, which produces a surface-appearance similar to momie cloth or cretonne.

ALBERT CLOTH—An all-wool material the two sides of which are of different colors, each side finished so that no lining is required; used chiefly for men's reversible overcoats.

ALEXIS.—A style of men's fur cap, distinguished by being long and deep, and finished without roll or vizor.

ALPACA is the woolly hair of an animal of the camel tribe, which inhabit the mountainous districts of Chili and Peru. In appearance this wool is fine, white and glossy, from 2 to 6 inches in length. It retains that peculiar gloss and beauty after being woven into textures, which particularly distinguish it from all other species of wool. Alpaca is shipped to this country in bales of 70 pounds, and is assorted on arrival into eight qualities, each suitable for a particular grade of goods. The

earliest manufacture of alpaca fabric was in Bradford England, in 1832, at which time the fabric was made with a worsted warp and an alpaca wool weft, and very heavy. At the present time it is known as a thin, shiny, double-fold fabric, usually black, with a fine cotton warp. The tariff on raw alpaca wool is 12 cents per pound; on the manufactured fabric valued at above 40 cents a pound, the duty is 40 cents per pound and 50 per cent ad valorem.

ANGORA WOOL, OR MOHAIR.—The wool of the Angora goat, originally a native of Asia Minor, where it is still principally reared in the neighborhood of Angora, a city in the province of Natalia. This textile material was first exported from Turkey to England under the name of Mohair in 1820. The increasing demand for, and value of Mohair stimulated endeavors to acclimatize the Angora goat in other regions. All European endeavors having failed, on account of the humid and uncongenial climate of that country, in the year 1849 several flocks were imported to this country, and since that time many fresh drafts have been obtained from Asia and distributed to Virginia and various Southern states, and to California and Oregon in the West, where they thrive best. Angora Mohair in the fleece (in this manner often sold for rugs) is the whitest known to the trade, of brilliant lustrous fibre, elastic and wiry in character, and totally devoid of felting properties. [See FELT.] It attains a length of 4 to 5 inches, but the long fibres are mixed with an undergrowth of shorter wool, which in the spinning process is combed out as "noils" for separate use. It is a material of enormous durability, and owing to its remarkable elasticity it is especially fitted for working into long-piled fabrics, such as plush and imitation fur, or in braids and bindings, and in boot and shoe laces. It is also largely used for making "Utrecht Velvet;" q. v. or furniture plush, for the upholstering of railway cars etc. In the making of imitation seal skin for ladies wraps, Mohair is extensively employed. Many dress fabrics of mixed Mohair and cotton, or Mohair and silk are also manufactured, but with the changes of fashion such materials are constantly changing in style, composition and name. The tariff on Mohair wool is 11 cents per pound; on manufactured articles or fabrics valued above 40 cents per pound the duty is 44 cents per pound and 50 per cent ad valorem.

AMERICAN CLOTH.—A name given in England to a cotton cloth prepared with a glazed and varnished surface to imitate morocco leather, used for carriage trimming; known in the United States as Enameled or Oil Cloth.

APPLIQUE. [Appli-ka.]—In modern dress and upholstery, applied or sewed on. Thus the gimp or pattern of soiled lace may be sewed upon a new ground, or embroidered flowers may be secured to new silk; in such case the pattern or ornament is said to be *applique*, and the whole

applique work. More generally, said of one material fixed upon another in ornamental work. *Point Applique* is point lace, in which the design, after having been separately made, has been applied to the net which forms the foundation.

APRONS.—Ever since our first parents ages and ages ago sewed fig leaves into aprons in the garden of Eden, that style of garment has been *a la mode*. We call it by many names now, the fig leaves of Adam and Eve having been developed by slow degrees into a valuable series of pinafores, suitable for the infant in arms, or the man and woman to whom labor is the natural result of having come into existence. In England aprons first came into general use in the 13th century, when they were called “barin-skins.”

ARCTICS.—A variety of rubber overshoes, distinguished by having a cloth top which buckles up over the ankles, rubber heels and soles, and and a nappy wool lining. [See GOLOSIES.]

ARMOZEEN.—French *armoisin*. A kind of Taffeta q. v. or plain silk used for women’s dresses in the 18th century and earlier.

ARMURE is French for “armor.” The word is suggestive of the style of weaving. In feudal times an armor was worn made of small metal plates, sewed to some textile fabric and lapping over one another like fish scales, so as to be flexible with every movement of the body. The weave of Armure silk is in imitation of this armor, the surface ridge of the pattern forming a small diamond or other angled figure. It is heavier than ordinary dress silk, and is sometimes termed Royal Armure.

ARRAS cloth takes its name from the town of Arras, situated in the north of France. In the 14th century this place was the chief seat of French Tapestry manufacture, for both quality and quantity. Hence the term Arras came to mean any sort of Tapestry, q. v. wherever made.

ASBESTOS—A fine quality of Asbestos has been woven into gloves and cloth, which are unaffected by fire. This cloth was formerly used as shrouds for dead bodies, and has been recommended for firemen’s clothes. It is a mineral substance of fibrous texture, but its feeble consistency has always proved the chief obstacle to its general use among textile fabrics. The tariff on Asbestos is 25 per cent *ad valorem*.

ASTRAKHAN.—Russian *astrakhan*. Originally a name given to skins with a short curly wool—notably the pelts obtained from young lambs from Astrakhan, European Russia. At present astrakhan cloth is a woolen or silk material with a long and closely curled pile, in imitation of the fur above mentioned, and is used for ladies’ cloaks, dress trimming and men’s clothing.

AXMINSTER CARPET.—[See CARPET.]

B

BAIZE—(Spanish plural for *Bay*.) In the 17th century this was a kind of fine soft woolen material, having a long nap, sometimes friezed and sometimes not, according to the uses it was intended for. At present it is a coarser material than formerly, being dyed in plain colors, usually red or green, and used for linings, table covers, etc.

BALBRIGGAN owes its name to the town of Balbriggan, county Cork, Ireland, near Dublin, where first was knitted hosiery and underwear of unbleached cotton yarn. At present it is the name applied to a class of medium heavy cotton underwear made from unbleached cotton, which distinguishes it from Lisle thread q. v. and Gauze q. v.

BALMORAL is the term applied to a variety of ladies' cheap cotton skirts, distinguished by not being furnished with a waist-band or hemmed at the bottom. They were originally a woolen petticoat, dyed red, with fancy black stripes, and intended to be displayed below the skirt of the dress, which was looped up. These were supposed to have been worn first by the daughters of Queen Victoria, during the visits to their royal residence at Balmoral, Scotland.

BANDANNA handkerchiefs are of Indian origin, though now extensively made and used in the United States. The cloth is first dyed solid Turkey Red q. v. and the white pattern then made by discharging the red with bleaching liquor in a powerful press. The pattern to be discharged is cut out on two metal plates, of the full size of the handkerchief. A dozen or more handkerchiefs are laid in between these plates and then the pressure applied; the liquor is run in on the uppermost plate, which is grooved on the upper side to receive it. The pressure on the cloth to make clean work (by preventing the spreading of the liquor) is enormous, often exceeding 500 and 600 tons. The bleaching liquor destroys the red color in all those parts where the plates allow it to circulate, thus producing the figure. Bandannas are made in sizes from 12 to 24 inches square.

BAREGE VEILING owes its name to Bareges, France, where first was manufactured a thin gauze-like silk fabric used for ladies' veils. At present Barege Veiling has a fine silk warp and a "woolen" weft, 30 inches wide. It is an imported fabric, and comes in several qualities, put up in a certain number of "aulnes" to the bolt. An aulne in our measure is one yard and a fourth.

BASTARD CLOTH.—A cloth presumably imitating a more expensive material.

BATISTE.—So called from its inventor, M. Baptiste, linen weaver of

Cambria, France. Originally a fine linen cloth made in three different thicknesses. At present the batiste of commerce is a cheap cotton fabric closely resembling figured lawn, the only difference being that batiste is slightly heavier and wider, though in both materials the patterns are printed on in the same manner.

BAUDEKIN.—A rich embroidered or brocaded silk fabric, woven originally with a warp of gold thread. [See TEXTILES.] In the 17th century called *Cloth of Baudekin*. Later the name was applied to any rich brocade, and even to shot silk. It is not found in use after the 16th century.

BEADS.—Small perforated ornaments, usually of a round shape, worn by women in necklaces, bracelets and head-dresses; and also used for ornamenting slippers, purses, watch-guards, and a variety of fancy articles. Beads are made of gold, diamond, amber, pearl, coral, garnet, crystal, steel, paste, wood etc.; but the greatest quantity are of glass manufacture. Glass beads were manufactured by the Phœnicians more than 3000 years ago. At present they form a favorite article of traffic with all savage tribes and nations, often being the only medium of exchange in bartering with them. Glass beads are commonly manufactured over the blow pipe, the glass which has been previously drawn out into a slender tube, being when sufficiently heated, blown into a bulb of the size required for the bead. Sometimes glass tubes having been cut into uniform pieces the size of bead desired, the pieces are thrown into a mixture of wood ashes and fine sand, and stirred about until their cavities are filled; they are then transferred to a heated iron pan and agitated until they assume a smooth rounded form. Taken out and their bodies cleared and cleaned, they form glass beads. In commerce known as the hollow, the tube and the bugle. The hollow are the most expensive kind, the price varying from 25 cents to \$2.50 per bunch of twelve strands. Common black beads are sold from 10 to 25 cents per pound.

BEAVER CLOTH is a heavy woolen cloth woven similar to doeskin, both plain and twilled, with the wrong side finished with a soft thick nap; much in demand some years ago for overcoats. At present this term is also applied to a smooth-faced, medium heavy wool material, napped inside, used as ladies' cloaking.

BEAVER HAT.—The modern stiff silk hat was commonly called a "beaver," until a few years after the civil war.

BEAVERTEEN.—A strong, napped cotton fabric for men's wear, made after the manner of a smooth fustian, shorn after being dyed.

BEARING CLOTH.—A cloth with which a child is covered when carried to church to be baptised, often richly embroidered; also called a

christening robe.

BENGALINE is a dress fabric woven exactly like a Faille silk, except that a fine "worsted" thread is substituted for the weft. This weft (which forms the cords) is entirely covered and concealed by the fine silk warp threads, so that the wool is not exposed on either surface.

BENGAL STRIPES are wide striped gingham, used for skirting, so called from having been originally brought from Bengal, but now manufactured exclusively in this country.

BIB.—From Latin *bibere*, to drink, whence also the words imbibe, bibulous, etc. A cloth worn by children to keep the front of the dress clean while eating; usually made of honeycombed cotton canvas, lawn, lace and the like.

BIRDSEYE LINEN.—A honey-comb or diamond-figured linen fabric, used for towels and fancy work.

BLANKET.—This is said to be a corruption of the French *Blanchet*. It is also claimed that the name is derived from an English manufacturer, Thomas Blanquett, who in 1340 was the owner of a large woolen mill near London. A woolen cover, soft and loosely woven, spread commonly over the cotton sheets for the procurement of warmth. Blankets valued at 30 cents or less per pound are subject to a duty of 17 cents per pound and 30 per cent; valued at 40 cents or less per pound the tariff is 22 cents per pound and 35 per cent; valued at 50 cents or less per pound, 33 cents per pound and 35 per cent. The cost of the labor to weave a 5-pound blanket is estimated to be 70 cents.

BLEACHING OF WOOL and animal fibres generally is a simpler and less important operation than the whitening of vegetable fibres. Wool, when sheared from the sheep, is covered with a varnish or greasy matter, technically called the "yolk" which it is the object of the bleacher to remove. This "yolk" in consequence of its soapy nature, is soluble in water, so that merely washing the wool in pure water would remove the greater portion of it, but it is found more advantageous to remove it by the process termed "scouring." Scouring is performed by means of an ammonia lye, prepared with soft water mixed with stale purified urine, which is found to contain a per cent of ammonia, upon which its action probably depends. The mixture is heated with steam to a temperature at which the hand of a workman can be held. In this bath the wool is left from one to two hours, according to the quantity of greasy matter it contains. It must now be thoroughly rinsed by exposing it to a stream of clear water, with constant stirring, till the last water passes off perfectly clean. Wool properly scoured is distinguished by its filaments being smooth, long slender white and perfectly free from foreign substances, not having lost their natural tenacity. If the scouring be prop-

erly done there is no need of further washing in soaps, or otherwise, till the wool is subjected to the process called "sulphuring;" and in point of fact it very rarely passes through any other process. Some manufacturers, however, recommend for the finer wools where a very delicate white is wanted, that they should be passed through two or more baths of soap and water. No caustic alkaline lyes can be employed, as they destroy and dissolve the wool altogether, nothing remaining but a kind of gummy soap.

The bleaching of woollen goods by "sulphuring" is applied to yarns and woollen goods only when they are intended to be finished white or light bright colors. The method of "sulphuring" is to expose the goods in a closed room to the vapor of burning sulphur. The goods are hung on poles and when the room is full, a quantity of sulphur placed in very flat and broad dishes is allowed to burn away gradually on the floor of the room, every aperture by which the vapor can escape being closed tight, so that it may permeate into every crevice of the goods. After exposure to this sulphurous acid vapor from six to twenty-four hours the goods are removed; and if to be finished a clear white, they are run through a bath containing some indigo carmine, which increases the brilliancy of the white. When they are to be dyed, they are treated with dilute sulphuric acid, thoroughly washed and dried.

The bleaching of wool is not so complete as the bleaching of cotton or linen, by chlorine. In the case of cottons and linens the color is completely *destroyed*, but in wool the sulphur merely combines with the coloring matter of the fibre, and produces a colorless compound, from which the original color can again be revived, either by soaking the goods in a dilute acid or a dilute alkali, such as soda. Hence it is that new woollen cloth or garments, such as flannel, blankets and underclothing, though almost colorless when bought, yet after being washed several times, return to their natural yellow; for the washing soda used, or the soap which contains potash or soda, destroys the colorless compound produced by the sulphuring process and revives again the original color.

BLOOMERS.—A peculiar and ridiculous costume for women introduced and advocated in 1850 by a Mrs. Bloomer, of New York, the distinctive features of which were a short skirt extending to the knees, and loose baggy trousers buttoned around the ankles.

BOA.—(Latin *Boa*—A water serpent.) A long serpent-like piece of fur, worn around the neck by ladies. Also a round fur tippet. Usually accompanies a muff to complete a set of furs.

BOBBINET. A net consists of a fabric of thread, twine or cord, the intersections of which are so knotted or twisted as to form meshes or interspaces of fixed dimensions; the meshes being usually lozenges of a uniform size. The art of netting is intimately related to weaving,

knitting and machine-lace making, from all of which, however, it is distinguished by the *regular knotting or twisting* of the different threads. Bobbinet, which is the foundation of all machine-made lace, is made by the intertwisting of contiguous threads of fine cotton or silk.

Prior to the year 1800, laces of every description were made by hand. Among the most beautiful of these hand-wrought laces at this time was a variety called "Brussels," which was distinguished by a portion of the threads being "twisted at regular intervals so as to form an open spot, in order to relieve the sameness of the tissue." The first attempt at the manufacture of lace by machinery was in imitation of this Brussels lace, probably on account of the great popularity of, and demand for, this variety. The first step was to make this open-work, (or bobbinet) upon which to ground the pattern. In England several efforts were made from 1758 to 1809, but the first really successful machine for bobbinet (so named from the threads crossing the warps being supplied from bobbins) was that of John Heathcoat, invented in 1809, and suggested by the machinery he had seen employed in making fishing nets. The principle of the invention was in the use of fixed parallel warp threads, around which the bobbin threads were worked as the filling of a fabric, one set going obliquely from right to left, and the second set obliquely across from left to right. In the machine the warp threads to the number of 700 to 1200 in a yard of width, are stretched from a roller, which extends the whole length of the thread beam, and the weft threads are wound each upon a bobbin, formed of two thin brass discs, riveted together, leaving a narrow space between them for the thread to pass out. Each bobbin holds about 100 yards of thread, and there are sometimes as many as 1200 of them to a machine. About 30000 meshes per minute can be made with improved machines. The pieces of bobbinet measure from 30 to 40 yards each; the width is variable, being very narrow in Wash Blond, and wider in Brussels and Darn Net.

BOLT.—Any quantity of rolled or wrapped fabric.

BOLTING CLOTH.—A cloth of linen or silk used in mills for bolting or sifting meal or flour. Also a fine wide linen fabric used by ladies for fancy-work. The finest and most expensive variety of silk fabric made is bolting cloth for the miller's use, woven almost altogether in Switzerland. There is no import duty on this, provided it is not used for, or suitable, for wearing apparel.

BOMBAST.—Cotton or other stuff of soft loose texture, used to stuff garments; padding.

BOMBAZINE.—From *Bombycina*, a cloth of the Romans in the 6th century. A light twilled dress fabric, of which the warp is silk and the filling worsted, q. v. giving it a sheeny appearance; formerly black, but now made in various colors. One of the oldest fabrics known.

BOOKBINDERS CLOTH.—A stiffly sized and glazed variety of cotton cloth, usually colored, and often decoratively embossed, much used for the cheap binding of books in place of leather.

BOOK-FOLD.—A piece of muslin or linen containing 24 yards.

BOOK MUSLIN.—A kind of thin starchy muslin, usually used for the covering of library books or lining of dresses; very similar to paper cambric.

BOUCLE (bu-clay) is a style of weaving in which a rough and knotted surface is produced. These bunches or knots are formed in the weft threads prior to weaving, and appear at short intervals over the surface of the fabric. This weave is generally confined to woollen dress goods and cloaking.

BROADCLOTH.—A fine "woolen" q. v. cloth, commonly black, with a glossy finished surface, principally used in making men's garments, so called from its breadth, which is usually 60 inches. Broadcloth is woven of the finest grade of felting wool, q. v. but when taken from the loom it does not present that fine and polished appearance which is the distinctive feature of broadcloth as seen in the shops of tailors. In the loom it is rough and dull colored, with the threads which compose it plainly showing. To obtain the "finish" it is put through the fulling and napping processes (explained fully under their proper heads) which completely conceals the warp and weft; then it is sheared to produce an even and smooth surface, and wetted, steamed, ironed and pressed many times to make the polished surface.

BROCADE.—A fabric woven with a pattern of raised figures or foliage; originally a silk stuff variegated with gold and silver, or raised and enriched with flowers, foliage and other ornaments; brocade is applied to either cotton or woollen fabrics, wrought and enriched in a like manner. First manufactured in England in the 13th century.

BROCADED.—This term is used to describe a fabric on which a figure of any kind is formed by the threads of the warp or filling being raised in such order as to produce the pattern required. The word has much the same application to silk and wool textures that "damasked" has to linen textures, or to worsted stuffs when used for upholstery purposes.

BROCATELLE.—A coarse brocade or figured fabric, commonly made of silk and cotton, or sometimes of cotton only; used chiefly for tapestry, linings for carriages and covering for furniture.

BROCHE.—(Bro-sha) French for *broach*, to sew or stitch. Broche properly means sewed or stitched, or ornamented in weaving with threads which form a pattern on the surface in imitation of stitching; has a meaning similar to *brocaded* when applied to woven fabrics; as a broche

shawl, a broche ribbon. The Broche shawl, made in imitation of the genuine Cashmere q. v. is distinguished by its "cone" pattern, or round scroll work. They were first made at Paisley, Scotland, and were of a peculiar bluish color, and known to the trade as Paisley shawls. At present they are made in France and red is the predominating color, called either Broche or Paisley.

BREECHES.—A bifurcated garment formerly worn to cover but the hips and thighs; sometimes, but less properly, used in the sense of trousers or pantaloons. The word is derived from the old English *breech*, which meant the lower part of the body behind, or the hinder part of anything.

BRUSH HAT.—The old fashioned Brush hats were made from beaver fur, first made into a felt cloth and then napped. The nap was produced in the process of sizing by being constantly "brushed" with a hand brush,—hence the name. The best qualities usually sold for \$15.

BUCKLE.—A metal appliance used for fastening things together. They were first generally worn in the reign of Charles II of England. They were then made of very expensive materials, often being set with diamonds and other precious stones, and worn as ornaments. At the present time are cheaply made and used mainly for ordinary clothes fastenings.

BUCKRAM.—A coarse linen fabric stiffened with glue, used in garments to keep them in the shape intended, and for wrapping fine cloths and other merchandise. It was originally a very different material to that now known by the name. In the 13th century it is described as a fine thin linen cloth, ranking with the richest silk.

BUGLE.—A shiny, elongated glass bead, usually black, used for decorating female apparel. Bugle trimming consists of these glass ornaments attached to a silk or gimp foundation; similar to Passamenterie.

BUNTING is a thin, loosely-woven, single width wool dress goods, woven both plain and laced; used originally in the manufacture of flags and signals of ships, but at present found in all colors and qualities and used for ladies dresses. Distinguished from Nun's Veiling by being but single width, of coarser and more open texture and made of worsted. The tariff on Bunting is 12 cents per square yard and 50 per cent, providing it weighs less than 4 ounces per square yard; if it weighs over this, 44 cents per pound and 50 per cent.

BURLAPS.—A coarse heavy material made of jute, flax, hemp or manilla, and used for wrappings and upholstery; outside coffee bags are made of burlaps. The tariff is 15½ cents per pound.

BURL.—To pick the burrs, or burls, from the surface of woollen cloths.

BUSTLE is derived from *busk*, which in 1586 was a "flexible strip of whalebone or other stiffened material used by fleshy women to keep their stomachers down, and to stiffen their stays;" also a "quilted or plaited thing to keep the body straight." Bustles have been worn in England of various shapes and dimensions, at different periods since 1841. At present they consist of a sort of pad or wire spring, worn by ladies for the purpose of expanding the skirts behind.

BUSKIN is derived from "boar-skin," of which it was at first made. A half-boot or shoe, strapped or laced to the ankle and the lower part of the leg, worn by the ancients. At present a low-laced, low-heeled shoe worn by women.

BUTCHER'S LINEN.—A coarse and heavy bleached linen material, used principally as a backing for shirt bosoms.

BUTTER CLOTH.—A thin and open, unsized muslin, used by dairy-men to wrap their rolls of butter; similar to Cheese Cloth q. v.

BUTTON MOLD.—A disc of bone or wood which is made into buttons by covering it with silk or other kind of cloth.

BUTTONS.—French *bouton*, from *bout*, end, extremity, bud. A catch of various forms and materials, used to fasten together the different parts of dress. The raw materials of which buttons are made are horn, bone, agate, india-rubber, mother-of-pearl, various woods and vegetable ivory; and for covering buttons there is used lasting, brocade, twist, velvet, silk and mohair. Button manufacture did not assume any special form until the 14th century, when buttons of gold and ivory were used as ornaments on the dress of both sexes. At the commencement of the 17th century the button trade had greatly increased in England and large quantities of bone, steel and wooden buttons were shipped to this country. The first manufactured in the United States was in 1826, by Samuel Williston. While he was dragging along as a country store keeper at Easthampton, Massachusetts, his wife bethought her that she could cover by hand the wooden buttons of that time, and thus earn an honest penny. From this the couple advanced in their ambition until they had perfected machinery for covering buttons, the first employed in this country. From this sprang an immense factory, and then others, until Samuel Williston made half the buttons of the world. His factories are still running at Leeds and Easthampton, Mass., coining wealth for the proprietors. Metal buttons are made of tin and also of brass containing a small amount of zinc. This is furnished to the button-maker in strips, out of which the discs are cut by a machine. This process is so rapid that one workman can prepare 12 gross in an hour.

Vegetable Ivory buttons are made in large quantities at Leeds Mass., and at New York and Newark. The Vegetable Ivory nuts come from

South America, and are about the size of an ordinary potato. These nuts grow on trees and before maturity are soft and full of milk; but if allowed to hang upon the trees gradually condense and grow as hard as flint. These are shipped to this country and kiln-dried, sawed into slabs of the proper thickness, from which the buttons are cut by a lathe, the holes being drilled in by a power lathe. The material can be dyed any desired color with as much facility as cloth, and will receive a high polish by friction. Horn, bone and ivory buttons are made in a similar manner. Buttons made of india-rubber q. v. composition *always* have the name of the maker on the under side. The process is very simple, being performed by means of a die, under considerable pressure.

Pearl buttons are made of pearl shells, the great bulk of which come from the Malay Archipelago. Quite a large portion of these shells are shipped to San Francisco, and thence to England via New York. But it is quite safe to say that the *entire product* eventually finds its way to England by one route or another, as London is the pearl market of the world, where the shells are sold at auction once a week, every Tuesday. Here the manufacturers of Europe buy their raw material and ship it to their factories, where it is "worked." There is no fixed value to pearl stock, the price fluctuating daily according to supply and demand. The bulk of pearl shirt buttons are made at Birmingham and London, while pearl dress buttons are for the most part made at Vienna, Austria. There are three grades of pearl dress buttons known to commerce:

- 1st. The Macassar, which is a pure white, of which " $\frac{3}{4}$ super," "super" and "extra super" buttons are made.
- 2d. The Mussell, of which are manufactured the "half-fine" grades.
- 3d. The Manilla, which produces the lowest grade goods.

The Macassar is a pure clear shell; the Mussell has a white surface with a yellowish or blackish back; while the Manilla is a dirty yellowish color throughout.

There are two systems used for the measurement of buttons, the English and the French. English measurement runs 14, 16, 18, 20 "lines" etc, while the French runs 4, $4\frac{1}{2}$, 5, $5\frac{1}{2}$ "lines" etc. An English "line" is one-fortieth of an inch, or 40 lines to an inch; the French line may be expressed thus: .08887 of an inch. The French line measurement is said to be obsolete, yet it is every day in practical use. To show in what relation the respective systems stand to each other, see the following:

English measure.....	18	20	22	24	26	28	etc.
French "....."	5	$5\frac{1}{2}$	6	$6\frac{1}{2}$	7	$7\frac{1}{2}$	"

Agate buttons used to be manufactured in England exclusively, but they have lost the industry. It came about in this way: A smart Frenchman, F. Bapterosses by name, went to England and hired to the Agate button-makers as a common workman, thoroughly studied the business and got possession of the secrets. He then returned to France,

where with the aid of the French government he constructed a large plant and was enabled to produce agates at half the cost of the English goods, which of course ruined the English industry. This man accumulated an immense fortune; and was made a Knight of the Legion of Honor by his Government in recognition of his services to mankind—especially the French part of it. He visited the Centennial in this country in 1876. Agates are made of a mineral substance known as Feldspar, found in the roofs of caverns at Briare, France. The raw material is taken to the factory and ground into paste, after which it is molded into buttons and baked; they are then sewed on the cards by machinery. On all of Bapterosses' goods will be found the letters "F. B." printed on the back of each card. These are the Frenchman's initials. They are the best goods made.

There is only one other Agate factory in the world and that is in Germany, but its product is not nearly so good, the Germans being unable to get the material that is perfectly clear and white. They are branded on the back of each card "R. C." and on inspection it will be noticed that they are not so well burned as the "F. B." goods. These specks seem to be a matter they cannot overcome in Germany.

The tariff on Agate buttons is 25 per cent ad valorem; on Pearl and Shell buttons 2 1-2 cents per line per gross and 25 per cent ad valorem; on Ivory, Vegetable Ivory, Bone or Horn buttons 50 per cent ad valorem.

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CALENDER.—A machine consisting of two or more steel cylinders revolving very nearly in contact, between which is passed a woven fabric, for "finishing" by means of great pressure, often aided by steam heat communicated from the interior of the cylinders. The object of calendering cloth is to give it a perfectly smooth, even and equal surface and sometimes to produce a glaze, as in jaconets, silesia, satteens etc. [See HENRIETTA, CALICO, COTTON.]

CALFSKIN.—The best Calfskin in the world is tanned in France, with the liquor extracted from the bark of the Evergreen oak, indiginous to that country. One single tannery in France has been in existence for over one hundred years and at present employs 12000 workmen, and ships its Calfskin to every continent and country on the globe, even to every city in the United States where there is a wholesale leather house or a boot and shoe factory. One of the reasons of the superior quality of this French Calfskin is accounted for by the fact that fully 90 per cent of the raw hides which this tannery receives come from England, Ireland, Italy and other populous European countries, where the calves

are *stall fed*. It is a well known fact among tanners that *range*, or *grass fed* animals produce the poorest and most inferior hides for making fine leather. The tariff on French Calfskin is 20 per cent ad valorem. [See LEATHER.]

CALICO.—Authorities agree in ascribing the name of this material to the great commercial city of Calicut, India. Sometimes called chintz; also print, from “printed calico.” The term calico is applied to cotton upon which colored patterns are impressed with the use of dyes. The effect produced by the printing process is like that of the colored designs brought out by the loom, but with much greater economy of time and labor. The origin of this art, like that of dying, is traced back to very remote antiquity, and in some form or other appears to have been practiced by nations of little skill in other respects. The aborigines of America stain their garments in different colors, which is a rude method of calico printing; while the natives of Mexico, at the time of its conquest by Cortes, produced garments of cotton adorned with figures in black, blue, red, yellow and green colors. In the different countries of India the art is practiced with various degrees of skill. From this latter country the method was introduced at an early period into Europe, but it did not become of much importance until the 17th century. In 1676 the manufacture of calico in England was greatly restricted by the opposition of silk and woolen weavers, and the new industry made slow progress. In 1720 the wearing of printed calico was prohibited by an act of Parliament under a penalty of \$25 for each offence on the part of wearer, and \$10 on that of the seller. In 1730 it was allowed to be printed provided the warp was of linen and the weft of cotton, but even then it was subject to an onerous tax of 12 cents per square yard—so great was the influence brought to bear on law-makers by the silk and woolen weavers. From England calico printing spread into Germany, France and Switzerland, and has gradually extended itself until now nearly every country on the globe prints its own cotton goods. The art has been perfected by the highest chemical talent, as well as by the ingenuity and taste of the artist. Artists, or pattern designers are employed whose constant occupation is to furnish new patterns, from which the printer selects those he judges likely to be the most popular. The French artists are admitted to produce finer designs than those of other nations.

There are two preparatory operations to which the raw, or “grey” calico cloth is submitted before it is printed,—bleaching and calendering.

Bleaching was formerly effected by pouring an alkali solution over the goods and steeping them for about a week, and after washing, steeping them for another week in buttermilk; after this they were thoroughly washed and exposed to the action of the sunlight for several

months. Almost a whole summer was required for the operation, which now requires but two days. This rude and simple process was practiced from the time of the early Egyptians down to the 18th century, there being scarcely any progress or improvement in the art for thousands of years. The bleaching of calico cloth now consists in boiling the cloth in a hot alkaline solution, then in lime water, and finally steeping it in a dilute solution of the chloride of lime, which is called the "chemicking" process. The liquor consists for every pound of cloth, of half a pound of chloride of lime and three gallons of water. The washings and boilings are repeated several times, altogether they amount to 18 in number, and the cost is five-sixths of a cent per yard for full bleaching. The bleaching of common print cloth is divided into two branches: 1st, print bleaching, in the case of which the goods are bleached as a preliminary to the process of printing; and 2d, white bleaching, which applies to goods to be finished "white" or unprinted, or merely lined or dotted. In white bleaching it is only necessary to satisfy the eye, but in print bleaching the material must be chemically pure, otherwise the colors in the subsequent printing process would be dull and blotchy, and would not combine evenly or perfectly. The natural coloring matter found in cotton is not essential to its texture, and fortunately can be removed by these chemical agents without injury to the structure of the rest of the fibre. "Grey" calico (as received from the loom) undergoes the process of singeing *q. v.* before it is bleached, in order to remove the downy nap and short threads from the surface of the cloth, which would interfere with the appearance of finished white goods, and with the uniformity and sharpness of patterns in the case of prints. The singeing process gives the cloth a yellow, dirty color which the bleaching also removes.

The next stage is starching, the object of which is to fill up the spaces between the threads in order that the pattern may be imprinted plainer. What ought to be, and by reputable bleachers really is used, is pure starch, either of corn or potatoes, made up into a stiff mucilage and blued with indigo. The cloth passes over a stretching rail into a long trough of this starch, in which a roller is mounted. As it comes out of the starch it is caught between a pair of rollers and the superfluous starch squeezed out and thrown back into the trough, the cloth passing on to the drying machine. Many bleachers use a great deal more starch or "sizing" than is necessary, in order to give light cloth an appearance of weight and bulk. A great variety of mixtures, both cheap and nasty, are used in place of starch, but naturally as little information as as possible on this point is allowed to leak out to the public. As much as from 50 to 90 per cent of size has got to be used, the greater part of it being china clay, with a certain proportion of magnesium to keep the

material damp and supple. The impurity is easily detected by washing the cloth and ascertaining the loss of weight before and after the operation. Cheap calicoes are also largely sized with lime.

Calendering is the operation by which the surface of the cloth is rendered smooth and even by the removal of all wrinkles, the flattening down of all knots and other imperfections, and the spreading of the threads so as to give them a flattened form, and the texture an appearance of closeness and strength. The polish often seen on calico, called glazing or satine, is produced by the friction they receive in this process. It is usually done by passing the fabric between cylinders pressed together with great force; hence the origin of the term, which is a corruption of *cylindering*.

The printing of the pattern on calico cloth was formerly effected by the use of wooden blocks, and has been in use from time immemorial. The printing is now almost universally accomplished by means of cylinder machines. A polished copper cylinder, the width of the cloth to be printed, is engraved with a pattern around its entire circumference, and from end to end, a different cylinder being required for each color or shade in the pattern. The cloth is passed under these and printed much after the manner of printing a newspaper. In establishments of any considerable extent many thousands of these copper cylinders are kept in stock, involving an enormous outlay of money.

In this country there are two kinds of calico printers,—those who make the goods, print them and sell direct to the jobbers, and those who merely print the cloth for jobbers or commission merchants at piece price. Gray print cloth may be purchased in market at New York or Liverpool by even retail merchants, who in turn can take it to the calico printers and hire the patterns put on. Ordinary print cloth, (64x64) usually sells for about $3\frac{1}{4}$ cents per yard; and 56x60 cloth at 3 cents; the cost of printing the same varies from 1 cent to $1\frac{1}{2}$ cents per yard. One pound of cotton will produce $8\frac{1}{4}$ yards of 64x64 calico. The tariff on imported calico is $4\frac{1}{2}$ cents per square yard. [See BANDANNA, INDIGO BLUE, Madder, TURKEY RED.]

CAMBRIC.—The town of Cambria, France was long famous for its manufactures of fine muslins. Here in 1520 was first made a fine thin muslin of pure linen, called *Cambric* in compliment to the city; this fabric was much used for the fine ruffs of that period as well as for handkerchiefs etc. The Scotch were the first people to imitate the linen cambric in cotton. This they did by using the best quality of cotton and twisting the warp and weft threads very hard. At present but very little of the linen cambric is in use, the fine glossy cotton imitation having superceded it. There is also a somewhat coarser cotton cloth called cambric, which is dyed in solid colors and finished soft or with a glaze, much used for linings.

CAMELET.—A fine soft “woolen” dress fabric, with long straggling hairs woven into the body of the texture and protruding from the surface, giving the appearance of real camel’s hair fabrics, of which these hairs are a characteristic feature.

CAMEL’S HAIR comes from southern Asiatic Russia and Tartary and from Africa; the latter is the finest. Its color is the light brown as seen in the goods made of it. It is separated into “tops”—long coarse hairs, and “noils”—the short fine curly ones—by combing, precisely as mohair, alpaca and other combing wools are treated. The “tops” are used for coarse cloths. The staple of the “noils” is about one inch long and the feeling is extremely soft and silky. It is the “noils” only that is used in underwear, hosiery, dress fabrics, shawls etc. Camel’s hair is often mixed with wool or cotton to make various grades of goods. A good quality of raw Camel’s hair is worth 50 cts per pound. It need not appear strange that Camel’s hair should become an article of common use in the U. S. The Camel is numerous over an enormous area of the earth; he is a large animal and his coat is heavy. The globe is being constantly ransacked for new and superior materials for clothing mankind, and for decorating him and his home. At first Camel’s hair was expensive but as the advantages possessed by this material came to be appreciated the demand was proportionately increased. A steady demand by the manufacturers for the raw material lead to a larger production and supply; these causes have lowered the price until now Camel’s hair fabrics can be bought at the same prices that are paid for fine wool fabrics.

CAMEL’S HAIR SHAWLS.—The high price of these shawls is due, not to the cost of the raw materials, but to the fact that each one is a splendid work of art that is slowly and patiently wrought and sold as great pictures are sold, for a price befitting their artistic worth. They are known in the United States as Cashmere shawls, and are made of the fine hair of the Cashmere goat. [See CASHMERE SHAWLS.]

CANTON FLANNEL received its name from Canton China, on account of its having first been imported from that city. The nap is produced by Teasling q. v. These teasles are cultivated in Virginia and Maryland and fetch high prices, as several hundred are required upon each bolt of canton flannel. Attempts have been made to supersede the vegetable teasle with wire brushes or metal teasle cards, but they do but rudely imitate the action of the natural teasle, in which each head is composed of a great number of points, at the end of which is a fine hook, the part so valuable for raising the nap. These hooks are strong enough to overcome a slight impediment, but are sufficiently yielding to give way and break when they become fixed in a knot or other obstacle which they can not disentangle. The metal cards, on the contrary, instead of yielding

tear out the threads, and thus injure the surface of the cloth. The most that can be done to meet the requirements of the manufacturer is to fix the heads of teasles, first being divided into halves and quarters, into a rotary cylinder, over which the cloth is guided, until the required nap is raised. [See TEASLING.]

CANVAS owes its name to *cannabis*, (Latin for hemp) and originally meant any coarse texture woven of hempen thread. Evolution has corrupted the word into plain canvas. At present it is known as a coarse unbleached cotton or linen cloth, never twilled, but always woven plain, used for tailoring purposes, tents, sails, etc. Honeycomb, Java, Penelope, Aida, Railroad and Congress are varieties of canvas woven in little squares or meshes, used for working fancy toilet articles with the needle. Also a carefully woven linen fabric used as a surface for oil paintings. It is prepared by stretching it on long frames and covering it with one or two coats of neutral colored paint. Four kinds are known to the trade: Single Prime, Smooth, Roman and Twilled.

CAPOTE.—A loose roomy cloak for ladies, properly with a cape and hood, made of light cloth and covering the person completely, and reaching nearly to the ground.

CARDIGAN JACKET.—A coarse heavy rib-knitted Jacket for men's wear. Owes its name to first being made in the town of Cardigan, Cardigan County, England, 240 miles north-west of London.

CARPET is the name applied in modern times to a woven or felted fabric made generally of wool, which is used for the covering of floors. The word is derived from Latin *carpeta*, woolen cloth, through *carpere*, to pluck wool.

Carpets and rugs were originally employed by oriental nations for sitting or reclining, or devotionally kneeling upon, and when first introduced into Europe in 1537, they were used as covers for tables and couches, or for laying before altars and chairs of state as foot-cloths. Carpets manufactured at the present day range themselves under two classes. The first, and ancient class, being such as are made by knotting into the warp by hand, tuft after tuft, the material of the pattern; and the second, consisting of those in which the pattern is woven up in the loom. To the first class belong oriental carpets and rugs generally (Turkish, Smyrna, Persian, etc.,) as well as such as are woven elsewhere under the above name. Persia is now, as it has been from most remote times, the recognized source of what is most truly artistic, durable and valuable in this manufacture, and after the products of that country come those of India and Turkey.

Persian Carpets.—The carpet weaving of Persia is similar in its process to the Gobelin tapestry manufacture in France. This tapestry. as

is well known, consists of tufts of wool (*Fr. moquettes*) or silk sewed on the strings of the warp, by means of small shuttle needles. The Persian carpet is formed by knotting into the warp tuft after tuft of woollen yarn, over each row of which a weft shot is passed, the particular pattern being produced by different colored threads, hand-wrought upon the warp. In Persia there are entire tribes and families whose only occupation is carpet and rug weaving. These dispose of their productions to the native merchants, who ship them either to Smyrna or Constantinople, where they meet with English and American purchasers.

Turkish Carpets are made after the same manner as those of Persia. In no part of Turkey does a large manufactory exist, the carpets being the work of households and families. These carpets are woven in one piece, in different sizes to fit small rooms, and there is this notable peculiarity in their manufacture, that the same pattern is never again exactly reproduced; no two Turkish carpets being quite alike. The colors are rich and harmonious, red or green being the usual ground colors, combined with blues, blacks and yellows, but very rarely is any white permitted to appear. The design is usually made up of a large central diamond pattern, with smaller figures filling up the corners and sides, the whole square carpet being surrounded by a border of lines of different colors.

India Carpets are made after the same plan as the foregoing. The weaving is carried on entirely by natives, who combine this as a farm industry together with agricultural labor according to the season. The prevailing color is a deep full red, broken with leaves, etc., of an orange hue, and interspersed with soft-toned blues and greens.

The characteristic carpet weaving of the United States is entirely the product of machine, or loom work, and of such there are several distinct varieties. Of these the first is the carpet made of rags.

Rag Carpets were first woven during the early settlement of this country. But little can be learned regarding the origin of this important industry. Until a few years ago no large manufactory for the weaving of rag carpets existed in the United States, the carpets usually being woven by households in rural communities. Several years ago the writer learning of an old lady residing in Indiana, who had been engaged in the manufacture of these carpets for the market for over forty years, made a trip thither in order to find out particulars of the process. On being sought out and the object of the errand made known to her, she willingly gave the needed information in detail, which, perhaps, can not be better told than in her own language: "Well," said the aged weaver, "we hev sewing childern in our fambly, and when we git more ole clo'es a layin' round then we kin take keer uv, I sets the gals to cuttin' 'em up into carpet rags. It don't make enny difference

what kind uv rags they be, whether wool or cotton, or black or blue or green, fer they are all dyed before wove up ennyhow. Ef I hain't got enough rags to make my carpet I kin always buy enough uv some neighbor at 5 cents a pound to finish out with. The gals cuts the rags up into strips half an inch wide and sows the ends together, and wind the different colors into balls as big as yer head. These balls make the fillin' uv the carpet. Then I go to town and git my cotton carpet warp—enny color I want it. Its done up in five-pound bunches, and sells fer about a dollar a bunch. Fer ev'ry three yards uv carpet I want to weave I git a pound and a quarter uv warp. I hev my own hand loom, and work when I feel like it. When part uv them rags are dyed bright red and grass green and other purty colors, which I do with my own hands in wash tubs and kittles, I tell you, young man, your ingraints and body brissells don't stand no show a tall. An' wear! land sakes alive, mister, when I tell you trooly and cand'ly thet I have seen these yere very rag carpets wear nigh onto ten years, and tromped on by big footed boys and gals every day in the year, winter and summer, you'll begin to THINK they'll wear. None uv my mother's fambly, nor me, nor none uv my boys and gals that's married off, ever had a boughten carpet on their floors in their fife, an' never will, fer they won't stand the wear an' tear like unto the rag, and they hain't nigh so purty from my pint o' view, and they cost a heap more money to top it off with; and besides—but shoo! go 'way with them town carpets!"

Rag carpets are known everywhere in the United States and Canada, but are fast being driven out on account of the superior appearance and low price of ingrains. Until the year 1874 they were exclusively made on hand looms in country villages, but are now also made at the regular carpet mills, full yard wide and 130 yards to the roll, whereas when Madame makes, or has them made they generally run from 15 to 40 yards to the piece; in most cases too much for one room, or not enough for two, and the retail dealer who buys it has to run the chance of getting a room to fit the number of yards of carpet.

Ingrain Carpet consists of either a cotton or woolen warp with a wool filling, and is woven in strips one yard wide. It is composed of two distinct webs interlaced together at one operation, and is therefore a double or two-ply carpet, similar on its two sides. Three-ply carpet is composed of three distinct webs, which by interlacing and interchanging their threads produce a different pattern on each side, and at the same time permitting much greater variety of color with a corresponding increase of thickness and durability in the texture.

The best quality of all wool "Extra Super Ingrain" has 1080 warp threads to the yard, and thirteen and one-half pairs of filling threads to the inch. This is the largest number of filling threads beaten into

any extra super carpet made on a power loom. In some patterns these threads are all double, while in others they are doubled and twisted to produce certain effects in color. These filling threads can be lessened a half of a pair at a time until they are reduced to six pairs to the inch, which latter grade is about the cheapest quality made under the title of all wool ingrain. Thus the quality of ingrain is determined by the number of pairs of filling threads per inch, and is known as 6, 8, 10, up to $13\frac{1}{2}$ pairs per inch. This is similar to the principle of indicating the quality of Brussels and Tapestry by the number of cords or "wires" per inch. Twelve-pair Supers (or mediums) contain twelve double woolen threads to the inch in the filling, and 960 warps to the yard. This grade is usually preferred by consumers on account of its being all wool and holding color better—although as a matter of fact they are not as *strong* as the best Extra Supers with wool filling and cotton chain. (These have the same number of threads as the all wool Extra Super.) The wool filled carpets are made in as low grade as 8-pairs to the inch, and could be made with even less than that if the trade demanded them.

Union Extra Supers were first made of cheap wool and cotton carded together for the high colors, and while the filling threads were part wool and part cotton, the chain was all cotton. At present competition has so cheapened them that they are mostly all cotton.

All grades below this are made of cotton, or cotton and shoddy wool, termed in the trade as 12, 10, $8\frac{1}{2}$, 7 and 6-pair cottons.

Some of the fine Ingrain carpets now manufactured are copied after the finest patterns of Body and Tapestry Brussels, both in colors and designs. In England Ingrain carpets are called *Kidderminster*, in Scotland they are called *Scotch carpets*.

Tapestry Carpets are manufactured by a very ingenious process, which was invented and patented in Scotland in 1832. The method of weaving Tapestry is a combination of weaving and printing, a pile or surface imitating and very similar to Brussels being produced, in which any desired number of colors is available, while only a single thread is used in making the pile, instead of the five or six which run through Brussels texture. In Tapestry weaving the ordinary process of printing is reversed—for instead of the fabric being first woven and then afterward printed (as in the case of all other printed or stamped fabrics) the threads are printed before the warp or woof is formed. One thread, or two treated as one, sometimes miles in length, is colored by steps of half an inch or so faster than a swift runner could make half of the distance. When the threads have all been parti-colored in this manner, they form the elements, as it were, of the intended pattern of the fabric. Singly in the long thread they exhibit no regular figure or pattern, but when woven up in the proper order the pattern comes into

view as little by little the thread is looped around the wires. Unlike the weaving on the Brussels principle, in which the colors cannot exceed five or six, any desired number or range can be introduced in a Tapestry carpet, though the manner of weaving over the wires are exactly the same. The wrong side of Tapestry shows nothing but the plain linen backing into which the pile is woven, though sometimes unscrupulous manufacturers stamp the wrong side in imitation of a Brussels' q. v. back for purposes of deception. The color wears off and the pile sinks down showing the foundation of the carpet much sooner in Tapestry than in Brussels, but as an offset to this the former are proportionately cheaper in price. Like Brussels, Moquetts and Wiltons they measure 26 inches in width. The quality is determined by the number of "cords" to the inch, termed in the trade 10-wire, 9-wire, 8-wire Taps, and so on, the less "wires" or cords per inch the cheaper and less durable the carpet.

Brussels, or Body Brussels as it is sometimes called, was first manufactured in Brussels, Belgium, in the year 1710. In the year 1640 they were first produced in England. The revocation of the edict of Nantes was the cause of many weavers seeking refuge in England. A number of these settled at Wilton, near Salisbury, and there began the pursuit of their craft. In the course of time they obtained a royal charter and formed themselves into a corporate body for their mutual protection. One of the peculiar terms of this charter forbade the weaving of carpets anywhere within ten miles of the little town of Wilton; thus early was the "protection of home industries" inaugurated. It is easy to see how the carpets came to be known as "Brussels," without doubt from the city where they were first made, and also "Royal Wilton,"—Wilton from the town and Royal from the charter, for both Brussels and Wiltons were made in those days in the little town near Salisbury. When borders began to be more extensively used, they were numbered the same as the carpets to which they belonged. Frequently there was a stair carpet also which matched the carpet and border and had the same stock number. They were distinguished by the terms "Body," "Border," and "Stair."

Body Brussels is a very superior texture, composed of a linen back and a woolen pile, having a rich, corded appearance. The quality is determined by the number of these cords per inch, varying from 8 to 16. The pile which constitutes the figure or pattern is raised entirely from the linen back by inserting a series of wires between the linen foundation and the superficial yarn, and looping the yarn tightly over each wire, which leaves a "row" or "cord." These wires are afterwards withdrawn and there is left the smooth looped surface as seen in all Brussels carpets. The colors are usually limited to five (called 5-frame

or 6-frame, as the case may be) though in the best quality six colors are introduced. These are warp-dyed, and are carried entirely through to the back ground. The best qualities are usually 5-frame, that is they have five different colors—and whenever a Brussels is made in 6-frame it is to get certain effects in colors, and there are usually less threads to the shot than in the 5-frame; but let two salesmen in competing stores be showing Body Brussels to the same customer, and one offer a 6-frame carpet for the same price the other offers a 5-frame, it is most likely that the latter will lose a point with his customer, who will naturally suppose 6 to be better than 5-frame. Each color is a continuous layer of thread dyed in the yarn, running from end to end of the web, which rises to the surface at close intervals as indicated by the design, and then goes out of sight and sinks into the body of the carpet, showing the pattern indistinctly on the wrong side. These are the main characteristics which distinguish Brussels carpets from Tapestries, in that each color is composed of a thread of itself, dyed in the yarn, which runs the full length of the web, the colors not being used to produce the pattern on the surface sinking into the body, causing it to be heavier and firmer and showing indistinctly the pattern on the wrong side of the carpet.

Velvets are Tapestries cut after the tapestry proper is made; it is passed through a machine and a small knife passes under each row and cuts the loops. The patterns in these have more lustre than the Tapestries, caused by the color being given off from the ends of the wool instead of from the sides, as in Tapestry.

Moquettes is French for "tufts of wool." These are woven substantially after the manner of Brussels, the colors being dyed in the yarn; differing in this, however, that the pile is looped first into a very coarse foundation to which is afterward attached another foundation for the purpose of giving the carpet weight and firmness. In Moquette the loops instead of being left corded in rows are cut open into an elastic velvet pile, leaving a "plush" appearance. To effect this the wires it is corded over are not round and smooth, as are the Brussels wires, but are flat and furnished with a knife edge at the top, which when withdrawn from the yarn cuts the pile. Moquettes might almost be termed an American carpet, not being in much demand in other countries. The coloring in them is very soft and delicate. The lady of the house who first purchases a Moquett carpet is oftentimes filled with forebodings the first time it is swept, on account of the amount of nap that is swept off; this nap is left on the carpet by the machine in shearing it. The pile or nap of a Moquette is much longer and deeper than that of a velvet.

Wilton Carpets are sometimes called Royal Wilton or Wilton Velvet

[see BRUSSELS.] They are made from a high class Body Brussels and nearly 3,000 threads of yarn are employed on a web of linen 27 inches wide, instead of the pile being left looped and corded, it is cut by the kuife-edged wires, giving the carpet a plush effect. Wiltons are made of extra fine, non-felting wools—which produce a surface extremely dense and lustrous. Among the respectable middle “society” class of this country it is the abiding hope and never-faltering ambition of every good house-wife to some day carpet the front parlor with a genuine Wilton. No matter in what community she may reside, the possession of a Wilton affords her a prestige in “society” approached only and never excelled by solid walnut furniture or a Steinway Grand. She knows as far as appearances are concerned it is the *creme de la creme* of all capeting, and fondly imagines that the soft and harmonious blend of colors, the rich, lustrous and velvety finish are but the reflex expressions of her family’s inherited refinement and good taste. This good taste may be gratified at from \$2.50 to \$4.00 per yard, “made and laid” at any regular carpet store.

Axminster Carpets owe their origin to James Templeton of Scotland, who obtained a patent for his invention in 1840. They were first made at Axminster England, hence the name. These carpets are pile fabrics, woven into a strong linen or hempen backing, and can be woven of a depth equal to any Oriental production. Their manufacture involves two distinct weaving operations: First, the preparation of the “chenille” strips which form the filling, and second, the carpet weaving proper. A design for the carpet that is to be woven is first prepared on paper, and accurately drawn in its proper colors. This design is then cut into long narrow strips and given to the chenille weaver to guide him as to the colors he is to use, and he proceeds in the regular order that they were cut with length after length till the whole pattern is woven up. This first web is cut into shreds or strips along its whole length, according to the number of chenilles it contains, and the loose edges faced together by a peculiarity in the weaving, so that a double pile projects upward from a finely woven center-rib or back. These chenille strips now form the “filling” for the second weaving, and being woven into a strong linen foundation in the same order that the strips were cut off from the original paper pattern, the colors consequently all come together properly, and the parts of the whole design come out gradually as the second weaving proceeds. Axminster carpets are classed with the very finest, surpassing in the depth of pile and beauty of coloring some of the present Oriental productions (which by the way are not all as fine as they used to be.) Some of these goods are three inches thick, and for durability can not be excelled. It is seldom they find their way into any but wealthy families, as the best grades cannot be retailed for less than

\$9.00 per yard.

Nearly all Tapestries, Body Brussels, Velvets, Moquetts, Wiltons and Axminsters are made in $\frac{3}{4}$ yard widths, with borders to match in $\frac{5}{8}$ yard widths. Hall borders made to match hall carpets are $\frac{1}{4}$ yard wide.

Aubusson carpets, manufactured in a French town of that name, are generally in one piece, to suit the size of the room. They are the finest and most costly carpets brought into the United States; being made in the hand or needle-work style of the India carpets.

From a strictly artistic point of view carpets should be darker in tone and more broken in hue than any portion of the room, both because they present the largest mass of color and because they serve as a background to the furniture placed upon them. As a general rule lighter carpets may be used in rooms thinly furnished than to the contrary, as we should otherwise have too overpowering a mass of shade. The patterns should always be proportioned to the size of the room, as a small figured carpet in a large room makes the floor space appear larger than a large figure would, and *vice versa*. [See HEMP, MATTING, OIL CLOTH, CORTICENE, LINOLEUM, KAMPTULICAN, VENETIAN, DUTCH CARPETS.]

The tariff on Aubusson, Axminster Oriental, and Wilton carpets is 60 cents per square yard and in addition thereto 40 per cent ad valorem; on Brussels carpet, figured or plain, 44 cents per square yard and 40 per cent ad valorem; on velvet carpets or tapestry velvet carpets 40 cents per square yard and 40 per cent ad valorem; on Tapestry carpets 28 cents per square yard and 40 per cent ad valorem; treble Ingrain, three-ply and Venetian carpets 19 cents per square yard and 40 per cent ad valorem; two-ply Ingrain and Dutch carpets 14 cents per square yard and 40 per cent ad valorem; Druggets and bockings 22 cents per square yard and 40 per cent; mats, rugs, screens, covers, hassocks, bed sides, art squares not provided for are subject to a rate of duty imposed on carpets of a like character or description.

CASHMERE.—A textile fabric used for ladies dresses, originally made of the fine wool of the cashmere goat, but since 1824, has been manufactured both in England and the United States of fine, soft prime native wool. It differs from merino in being twilled on one side only, and from Henrietta in having a softer finish and a more subdued luster. [See HENRIETTA.]

CASHMERE OR KASHMIR SHAWLS are made from the fine downy wool of the Cashmere goat, found in Thibet, Asia. These celebrated shawls are made in the valley of Cashmere, in the north-west of India. The genuine Cashmere shawl is characterized by the great elaboration and minute detail of its design, in which the "cone" pattern is a prominent feature, and by the glowing harmony, brilliance, depth and endur-

ing qualities of its colors. These excellences are due to the raw material, which consists of the very fine, soft, flossy under wool of the Cashmere goat. A single goat does not yield more than three ounces, and the fleeces of ten goats are requisite for the manufacture of a shawl a yard and a half square. The wool is sorted with patient care by hand, and spun into fine thread, a work of so much delicacy owing to the shortness of the fibre, that a pound of undyed thread is worth \$12.15 cts. The various colors, costly and permanent, are dyed in the yarn. The shawls are woven in rudely constructed looms, a fine one occupying the labor of three men a whole year in weaving; and it is to this slow and laborious process that their high prices are due. It is said that although \$3500.00 has been known to be paid for a single shawl, that but very few of the finest ever leave India. The commonest qualities range in price as low as \$50, and consumes from 16 to 20 weeks in making. There are two principal classes, the loom-woven shawls, sometimes woven all in one piece, but more often in small strips or squares, which are sewn together with such precision and neatness that the sewing is quite imperceptible, it being simply impossible for the seam to be detected; second class comprise embroidered shawls, in which over a plain ground is worked by needle a minute and elaborate pattern. The great excellence of these fabrics has never been equalled. The genuine wool has been imported into France, and the greatest care exercised in working it up, but still all imitations remain imitations. For a long while it was believed that the water of Cashmere used in the solution of rice starch, in which the wool is frequently washed before use, gave to it a peculiar softness and gloss; a belief the natives did not dispute. More recently it has been stated that the fine wool used for genuine Cashmere shawls is taken from the *inner winter fleece* of the Thibet yak, as well as the Cashmere goat, both inhabiting intensely cold and dry table lands from 14000 to 16000 feet above the sea level. It is, however, very probable that the unwearying patience and inherited skill of the Oriental weavers form considerable factors in the result, while the particular attention paid to preparing the wool, which is carefully cleaned and scrupulously and conscientiously sorted, would also have a proportionate influence. Attempts have been recently made to naturalize the Cashmere goat in California, with very successful results.

Imitations of the real Cashmere shawl are made in France and called "Broche," q. v. and also at Paisley in Scotland, whence comes the name "Paisley" shawls. It is also known as the Camel's hair shawl, from the popular notion that the finest were made of that material.

CASSIMERE.—(French *cassimir*; has the same origin as Cashmere or Kashmir.) Cassimere is the general term applied to that class of all-wool cloths used for men's clothing, woven either plain or twilled, coarse

or fine, of "woolen" yarn. The pattern of cassimere is always woven in plain and distinct, and the cloth is never napped. In order to make the pattern more distinct cassimeres on leaving the loom are slightly felted and then undergo the process of singeing, to remove from their surface superfluous nap or ends of wool that have been ruffed up in weaving, thus producing a smooth soft surface. It is a mooted question which are the better for wear, worsteds or cassimeres, they being the exact opposites of each other. The friends of the latter contend that the looser and more pliable a woolen cloth is woven, and the greater amount of natural elasticity preserved, that much better it will produce a resisting surface.

CASSINETTE.—(Same origin as cashmere.) Originally a cloth made of a cotton warp and a very fine wool weft.

CASSOCK. - Any loose cloak or outer coat worn by men, but particularly a military one. Also a long clerical coat, buttoned over the breast and reaching to the feet, and drawn in at the waist by a broad sash. In the Catholic church its color varies with the dignity of the wearer: priests wear black; bishops purple; cardinals, scarlet; and the pope, white. If lined with fur it is called a pelisse.

CELLULOID.—A combination of gun cotton and camphor. Its successful manufacture and introduction has only been accomplished in the the past twelve years. Celluloid consists virtually of vegetable fibre, treated with certain acids, under certain conditions; the resultant product being united with camphor and other suitable substances so as to make it elastic and capable of being molded in any form.

CHALLI is made either of wool or cotton, or a mixture of the two, and are distinguished by their being thin, soft and pliable, without any sizing, gloss or polish. The pattern is usually printed on, though in some of the finer grades of pure wool challis the pattern is produced in the loom. Challis possess a softness, with at the same time sufficient "body"—produced by special treatment in spinning and weaving—and when printed in fast colors are capable of a finish not found in any other variety of dress goods. All wool Challi does not differ materially from the old fashioned delaine. Neither fabric wrinkles easily, and both have a cool, dainty look especially suited for summer weather. Most Challi patterns are copied from French silks, which is one of the many reasons for their unusually tasteful designs and artistic effects.

CHAMBRAY gets its name from Cambray, France, where it was first woven of linen. At present it is a species of gingham, with a linen finish, in which rarely more than two colors are used; it is made of extra fine cotton and rather stiffly sized with pure starch.

CHECKS were formerly called plaids; the word *check* having come into use from the practice of courts and banks to settle accounts and compute money by means of counters or tallies on a table covered with a square checkered cloth; the word having originally been derived from French *echiquier*--a chess board.

CHEESE CLOTH is a thin limp muslin either brown or bleached which dairymen use to cover their cheese. Another variety called Cotton Bunting is woven smoother and more even, and is used by women for a cheap white dress goods. It is entirely free from starch or sizing.

CHEFRON—A species of thin transparent silk gauze, woven of threads so fine that ordinary print may be read through it as easily as though the fabric did not cover the paper. It is stated that one pound of the warp of Chefron would extend 8 miles.

CHEMISE is the French word for shirt, and is derived from the Arabic *camis*, which also means shirt. The innermost garment worn by women; anciently known as shift, or smock. *Chemisette* is the diminutive of chemise. A ladies garment for covering the neck, made of some light fabric, as lace or cambric, usually worn under a waist cut lower at the neck, in imitation of the exposed portion of men's shirt bosoms.

CHENILLE, the French name for caterpillar, is a beautiful description of cord employed for embroidery and decorative purposes. The name denotes the appearance of the material, which somewhat resembles that of a hairy caterpillar. It is usually made of silk, is sometimes a combination of silk and wool, and has been produced in wool only. There are two sizes; the coarse is called "Chenille Ordinaire," the small "Chenille a Broader." There is also another kind of chenille called "Pomponet," having a very long pile, boa-shaped and employed for neckties. For the purposes of millinery it is mounted on fine wire. The fine, soft silk chenille is that used for embroidery and sold in art colors.

CHENILLE CLOTH.—A fabric made with a fringed silken thread used as the weft, in combination with wool or cotton—a fur-like surface is thus produced, whence its name.

CHEVIOT.—A twill-woven, napped woolen cloth, originally made from the wool of the Cheviot sheep. These sheep were formerly natives of the Cheviot Hills, near the boundary between Scotland and England. Genuine Cheviot is always woven on a twill, and is finished with a close matted nap; of late years napped flannels frequently bear the title of Cheviot.

CHEVIOT SHIRTING originally signified a soft finished cotton fabric free from sizing, but of late years has come to include all medium grades of fine-threaded shirting.

CHINA SILK is the name properly applied to silks woven in China, on the primitive hand looms of that country, in which both warp and weft are exactly alike, being of the same size and woven in evenly. These silks are easily recognized on account of the imperfections which always mark hand spinning and hand weaving; some of the threads being heavier than others, a somewhat irregular surface is produced. Japanese silks are the same but in name. The name "China" silk has also been adopted recently for a class of machine-woven silks made in imitation of the more servicable hand loom silks of China and Japan, but these machine goods are free from the imperfection of uneven threads. Real China and Japan silks possess a beautiful natural lustre, and come only in cream, white and ecru, the patterns (if any) being printed on after landing in this country. [See INDIA SILK.]

CHINCHILLA.—A squirrel-like animal found in the mountains of South America. The ancient Peruvians were accustomed to employ the wool of these animals in the manufacture of fine fabrics. The fur is of a pearly-gray color, rolled into little tufts; much used for muffs and tippets, lining for cloaks, etc.

Chinchilla overcoating is a thick, heavy, double-woven fabric [see WEAVING AND TEASLING] formerly of a pearly-gray color, with a long napped surface rolled up into little tufts in imitation of Chinchilla fur. At present it is manufactured in all colors and qualities, used for men's overcoats and ladies' cloaks. Chinchilla is found both in all wool and "union", usually with a slight nap raised on the wrong side. It differs from Frieze in not being so heavy, and from Montenac and Fur Beaver in having its surface-nap rolled or curled into small tufts.

CHINE is applied to fabrics in which the warp is dyed in different colors, so that a mottled effect is produced, or in which a double thread formed of two smaller threads of different colors, twisted together, is used to produce a similar mottled or speckled appearance. In Chine silks the threads are colored in a similar manner, so that when woven up into the fabric the peculiar appearance of the shadow is produced.

CHUDDER is the name given to the plain shawls of Cashmere of solid color, without pattern except a herringbone twill, or if embroidered having the embroidery the same color as the ground.

CLAN TARTANS.—Tartan is from Milanese *tartantanna*, which signified linsey-woolsey, or cloth of different materials and colors. These parti-colored plaids were long worn by different Scotch clans, in various combinations of colors. The exact date of the introduction of "clan tartans" in this country, which have at times assumed so many wonderful and picturesque varieties, is assigned to 1822. The fashion of wearing these plaids has been revived from time to time during re-

cent years, and have been variously styled "Scotch Plaids," "Clan Tartans," "Tartan Plaids" etc; The numerous clans into which the Highland population was divided had each a special tartan, by which it was distinguished, but many new and imaginary "sets" have been invented by manufacuturers, with the result of introducing confusion in the heraldry of Tartans, and of throwing doubt on the reality of the distinctive "sets" which at one time were undoubtedly recognized as the badge of various clans.

CLOCK.—(From *clokke*, which in its original sense meant a bell.) Applied at first, in 1542, to a bell-shaped ornament or flower on the side of hoods and hose. At present any figured ornament on the side of the ankle of a stocking, either woven in the fabric or embroidered upon it.

CLOTH.—(Formerly Cloath, origin uncertain.) A fabric or texture of wool or hair, or of cotton, flax, hemp, ramie or other vegetable fibre formed by weaving or intermixture of threads, and used for garments or other covering. Specifically, in the trade, a fabric of *wool* in contradistinction to one made of other materials.

COCOA MATTING is made of coir, which is the thick, fibrous husk which surrounds the cocoa nut when first taken from the tree. This husk is spun into a small cord and the matting is woven thick and heavy and rather open in texture, so as to permit the dust and dirt to sift through it; especially used where much wear is expected. The tariff on Cocoa matting is 12 cents per square yard, and on door mats 8 cents per square foot.

CONEY FUR is the fur of rabbits, used for making felt for hats and also in the manufacture of the cheapest grade of fur caps. [See FUR.]

CONVENT CLOTH is woven with a silk warp and wool filling, the weave resembling that of linen momie cloth as seen in towels etc. It is a light weight fabric and comes in white and plain colors, used for portions of ladies' fine dresses.

CORAH SILK is a light East India washing textile, of a cream white, lighter in shade than the Pongee or Chinese undyed silks. It is much used by the young ladies for evening dress, being very economical in wear.

CORDUROY.—(French *corde du roi*, royal cord or king's cord.) A thick cotton material corded or ribbed on the surface. It is extremely durable, and is especially used for the garments of men engaged in rough labor, field sports and the like. The general structure of corduroy is the same as velvet q. v., with a twill foundation and a pile surface. The cords are produced by a peculiar disposition of the pile threads,

they being "thrown in" where the corded portions are and absent in the narrow spaces between them. After leaving the loom and undergoing the operations of brushing and singeing to give the cloth a smooth appearance, it is piece-dyed, usually some shade of olive, slate or drab.

CORKSCREW WORSTED.—So called from its fancied resemblance to the twists of a corkscrew; this particular weave has for several years been extensively employed in the manufacture of worsted goods, more especially in cloths intended for men's clothing. The remarkably long run and success of the Corkscrew pattern has had but few parallels in the history of cloth manufacture. The structure of what may be termed the ordinary class of Corkscrews is based on the Sateen q. v. or Cashmere principle. It is predicted that the time is not far distant when Fashion will cease to smile on this particular weave, and then they will have had their run—together with Broadcloth and Doeskin they will exist only as memories of things that have been.

CORSET is derived from French *cors*, body; hence corpse, corsage etc. In the middle ages corsests were made with skirts and sleeves. At present a close fitting waist, usually made of quilted jean, stiffened with strips of whalebone.

CORSET JEANS.—A double fold calendered cotton drilling used principally at present for lining the waists of ladies dresses. [See JEAN.]

COTTON.—Among all the materials which the skill of man converts into comfortable and elegant clothing, that which appears to be the most extensively useful, though it was the last to be generally diffused, is the beautiful product of the cotton plant. The native botanical home of cotton is in the East. Since the fifth century before Christ, India almost every where throughout her wide-spread countries arrayed, as she still arrays, herself in cotton, gathered from a plant of the *Gossypium* family which has its wild growth there. More than two thousand years before England conceived the idea of applying modern industry to the manufacture of cotton, India had matured a system of hand spinning, weaving and dyeing which during that vast period received no recorded improvement. The people, though remarkable for their intelligence whilst Europe was in a state of barbarism, made no attempt to improve upon their laborious hand processes, nor was the cultivation of cotton either improved or considerably extended. Possessing soil, climate and all the requisite elements from nature for the production of cotton to an almost boundless extent, and of a useful and acceptable quality, India for a long series of years did but little towards supplying the manufacturers of other countries with the raw material which they required. With the discovery of America, however, a competitor arose in the production of this valuable staple; tardy and uncertain as was the

development of our cotton industry prior to 1792, the invention of the cotton gin by Eli Whitney in that year, gave it a magical impetus which has placed the United States foremost among the cotton producing countries of the world, and at present the raw materials most in demand by manufacturers on either side of the Atlantic are the "Sea Island," "New Orleans" and "Upland" varieties, which taken together are unequalled by the products of any other part of the globe.

The Sea Island cotton, grown in the soft and balmy climate of low-lying islands off the coast of Georgia, Carolina and Florida, where frost is scarcely known, has surpassed all other varieties of cotton in the length and beauty of its staple. The delicate and silken filaments of this variety renders it highly valuable in the production of the finest yarns. It is never introduced into the coarser muslins, but is used for the most delicate fabrics, and very largely in the manufacture of the finest quality of cotton thread; and it is also consumed in large quantities by silk manufacturers, the fine, soft and glossy fibre rendering a mixture with the thread of the silk worm difficult to be detected. "Upland" cotton is generally a light flimsy cotton, of a weak and very unequal staple, used ordinarily for the filling, or weft threads. "New Orleans" cotton is superior to Upland, and has the preference on account of its clean, soft and glossy appearance. It is rather short in staple, but even and strong. It is said that no crop in the United States presents an appearance so beautiful as growing cotton, especially at the gathering season, when the globes of snowy wool are seen among the glossy dark green leaves, exhibiting at the same time on a single stem the expanding blossom, the bursting pod and the snowy flakes of ripe cotton. Every boll of cotton contains seeds resembling unground coffee, which when removed, leave only about one-third in weight of clean cotton. These seeds are removed by the cotton gin, and the cleaned cotton is then taken to the spreading-machine, through which it passes and is wound in a fleecy state upon a large wooden roller, to be transferred to the carding machine.

Carding of cotton is the process of disentangling and arranging in parallel rows the *fibres* of the cotton, so as to facilitate the *twisting* of them together. Carding may be compared to the combing and brushing of one's hair, and the *card* combines the properties of the comb and brush, being a large brush with wire teeth instead of bristles. These teeth are inserted in strips of leather, which are fastened to the surface of a cylinder. Several of such cylinders are so arranged that the ends of the teeth are nearly in contact, and the cotton being brought to them, is caught up, passed from one to the other and combed out as the cylinders turn round, in the form of beautiful films or fleeces. These films, which are the width of the cylinders, are next contracted to a narrow ribbon

by being passed through a funnel and drawn out, in order to make them ready for the next process, called spinning.

In spinning cotton there are two kinds of machines used—"throstles" and "mules." The throstle is employed in the spinning of yarn for warps. This yarn has its fibre closer twisted than that spun upon the mule, and is more esteemed for certain purposes, especially for making sewing thread. The mule, or mule-jenny, differs from the throstle in that it spins a yarn much finer and softer, though more woolly in texture than throstle yarn; mule yarn besides forming the weft of cloth is also doubled and used for a variety of purposes wherein a tightly-twisted, thread-like yarn is not required.

Cotton after being spun, is folded in hanks of 840 yards in length. The *number* of this cotton yarn is owing to the number of hanks 840 yards long that weigh one pound.

Of	No.	10	yarn,	10	hanks	of	840	yards	each,	weigh	one	pound.
"	"	20	"	20	"	"	840	"	"	"	"	"
"	"	50	"	50	"	"	840	"	"	"	"	"
"	"	60	"	60	"	"	840	"	"	"	"	"
"	"	70	"	70	"	"	840	"	"	"	"	"
"	"	80	"	80	"	"	840	"	"	"	"	"
"	"	90	"	90	"	"	840	"	"	"	"	"
"	"	100	"	100	"	"	840	"	"	"	"	"

On the latest improved mule-jenny a single thread has been produced upwards of one thousand miles in length.

COTTONADE is the name given to a coarse, heavy variety of cotton cloth used for men's cheap clothing, distinguished from cotton worsted by being plain-woven and of coarser threads. The reason of cottonade having lost its former popularity, is on account of the superior and more stylish cotton "cassimeres" which have come into fashion, and also from the fact that shoddy woollen goods can be purchased for almost the same price. Many of the old cottonade mills do not make a piece of the old fabric except in small quantities for special orders; several of the once prominent cottonade makers are even scarcely remembered. The decline in the *demand* for the durable cottonade is one of the things to be regretted, but as a matter of fact the decrease in the production of this cloth as a specialty for men's clothing has been wonderful.

COUNTERPANE.—The top cover for a bed, stitched or woven in squares, from the idea of panes or square openings, such as were formerly employed in some parts of dress—point against point. It is also claimed to have been derived from the French word *Coutre poyn*, a wadded wrapper or quilt. [See QUILTS, MARSEILLES.]

COVENTRY BLUE in 1581 was a kind of vivid blue thread produced at Coventry England, dyed with a kind of indigo and used for fancy embroidery.

COVERLET.—The outer covering for a bed, sometimes incorrectly called "coverlid."

CRAPE proper is a silk fabric of a gauzy texture, having a peculiar crisp and crimpy appearance. It is woven of hard spun silk yarn "in the gum," or natural condition. There are two distinct varieties of this textile, soft (Canton or Oriental) crape and hard, or crimped crape.

The wavy appearance of soft crape results from the peculiar manner in which the "filling" is prepared, the yarn from two bobbins being twisted together in the reverse way. The fabric when first woven is smooth and even, but when the gum is afterwards extracted by boiling from two to four hours in very hot water, it at once becomes soft, and the filling losing its twist naturally gives the fabric the waved structure which is its distinguishing feature. These soft crapes are used either white or colored for ladies scarfs and shawls, bonnet trimmings, etc. The Chinese and Japanese produce the finest crapes manufactured.

The crisp, crimped and elastic structure of hard crape is not produced either in the spinning or the weaving, but is due to processes through which the gauze passes after it is woven. What the exact details of these processes are is only known to a few manufactures, who so jealously guard their secret that in many cases the different stages of the manufacture are carried on in towns far removed from each other. However, it is known that the hard or mourning crapes are woven of hard spun silk yarn "in the gum," and in order to produce the crimp they are passed between heavy steel rollers, the surfaces of which are so creased and indented as to produce the pattern desired. They are almost exclusively dyed black and used for mourning purposes. Commercially they are distinguished as single, double, 3-ply and 4-ply.

Albert Crape is a variety composed of a union of silk and cotton. **Victoria Crape** is of all cotton. The width of these varies from 32 in. to one yard. **India Crape** is a fine silk crape gauze, of an extremely light texture. **Crinkled Crape** is another airy fabric, woven after the manner of crinkled seersucker, dyed in solid colors. **Imperial Crape** is a crinkley gossamer silk fabric used for ladies' neckwear. **Japan Crape** is a very light weight, close-woven silk fabric, closely resembling Crepe de Chine in structure, except that the Japan has no lustre. **Canton Crape** is a light, soft variety, usually half silk and half cotton. **Crape Cloth** is woven of all wool and dyed in all colors. It is of an irregular weave, much resembling the weaves of Japan Crape and Crepe de Chine.

CRASH is from Latin *crassus*, and is a general term used to denote any strong coarse linen fabric used for towelling, packing, and for dancing cloths to cover carpets, tarpaulins etc. Crash and towels, both in their use and title, have remained unchanged for a long period, even if they have ever known change.

CRAVAT is a corruption of the German word *crabat*. In 1636 an Austrian regiment of soldiers arrived in Paris France, in the dress of which one characteristic was much admired by the people—a neck wrapper or scarf of silk woven by the officers and muslin by the soldiers, all alike tied in a bow with pendant ends. The Parisians speedily adopted the novelty; and whenever Paris starts a fashion the balance of the world meekly follows it. In time cravat came to mean any sort of a scarf not made up, which was tied after being placed around the neck

CREPE DE CHINE.—The term applied to a variety of extremely thin crape q. v. silk, distinguished by being woven of very fine silk and its lustrous surface. (See **CHINE** and **CRAPE**.)

CREPON—A species of soft fine crinkled crape, woven in satin stripes; very transparent and gauzy.

CRETONNE takes its name from the first maker, M. Cretonne, of Paris. Originally it was a strong white fabric of hempen warp and cotton weft with various textures of surface, sometimes plain, but oftener twilled or "momed," printed on one side with large flower patterns, usually in colors, and used for curtains, lambrequins, furniture covering etc. It is woven with a fine warp and coarse weft, of various widths, and finished dull or unglazed.

CREWEL is from the German word *Kleuel*, a ball of thread. Crewel is a fine two-threaded worsted yarn, slackly twisted, used in a kind of embroidery work, usually upon a linen foundation.

CRINOLINE.—(From Fr. *crin*, horse hair, and *linum*, flax.) When first manufactured crinoline was woven of horse hair and linen, but is now woven of cotton stiffly sized, and used as a cheap material for stiffening ladies' dresses. The original material began to be used about 1852 in the manufacture of ladies stiff skirts; and when this fashion was followed by that of wearing greatly projecting skirts of wire or steel springs, the word crinoline continued to be used to designate the latter article. The first crinoline skirts for expanding the dress was invented by Empress Eugenia of France, just before the birth of the Prince Imperial, and the fashion was adopted by Queen Victoria when Princess Beatrice was expected. The amplitude given to the skirts by this invention is unimaginable. (See **HOOPSKIRT** and **FARTHINGALE**.)

CROWN LINING is a fine crinoline or stiff tarlatan, used by milliners for lining the crowns of ladies bonnets.

CUT CASHMERE is a variety of twilled, double-fold dress goods having fine sunken lines running the length of the web producing an appearance somewhat of "dropped threads" or incisions. Also known as Sebastopol, and woven all wool and with a cotton warp.

D

DAMASK.—A textile fabric woven in elaborate patterns, of various designs, as flowers, leaves, etc., woven in the loom. It was originally made in Damascus in the Twelfth century, when Damascus had attained a perfection in weaving then unexampled, whence its name. Damascene, or Damascus cloth, thus became synonymous with excellence and splendor, and in time came to denote *any* fabric of rich working and elaborate design. At present it signifies either of two entirely different materials; (1) *Curtain Damask*; sometimes called Tapestry, which is made of silk and wool, or silk and cotton, in large vari-colored patterns woven up in the loom, used chiefly for furniture covering, curtains and portieres; (2) *Table Damask*, which is a fine twilled linen and cotton fabric, used especially in making table linen q. v. It is generally ornamented with a pattern that shows itself by opposite reflections of light from the surface, without contrast of color. This effect is produced by the satin principle of twill weaving. [See SATIN.] The name Damask is also applied to a cotton fabric usually found in different shades of red, and used for curtains, table covers and the like.

Double Damask is an eight-leaf twill, and Single Damask a four-leaf twill; i. e. in which the pattern is formed by the warp passing over eight and four wefts respectively and then under *one*, and over eight or four more respectively, and so on.

DAMASKED.—Ornamented with flowers or patterns on the surface which are produced by weaving and not by printing or stamping. The word "Damasked" when applied to linen or cotton textures, or to mixed materials when used for upholstery purposes, has much the same meaning as 'brocaded' when applied to silk and wool textures.

DARNING NEEDLES are sold at wholesale by the thousand—sizes varying from 12 coarse to 18 fine, with usually a rise in price of 10 cents per size. Double long darners are sized 0 and 00. [See NEEDLES.]

DEBEIGE is a French word meaning unbleached serge. At one time in France there was a sort of twilled dress goods made of unbleached and undyed grey cotton warp and unbleached and undyed

woolen weft, called Beige. At present in this country it is one of the few dress goods which has not departed far from the original fabric. Although it is now dyed to some extent it still remains a twilled serge-like material in shades of gray, drab and slate.

DELAINES.—(French *mousselines de laine*, or muslin of wool.) An expressive title which signifies fully what manner of fabric they properly should be. Delaines are either plain untwilled or brocaded dress goods, which should always be made of wool, but which frequently may be found of cotton and wool mixed. The old fashioned, soft, plain woven delaine is easily recognized at present under the name of Challi. Manufacturers and importers undoubtedly think that to change the name of a rose occasionally adds to its odor. The endurance of this material is wonderful, it does not wrinkle easily, and when made up and properly draped, has an essentially feminine and dainty look.

DENIM.—A coarse cotton drilling used for overalls and working shirts, of which the quality is denoted by the weight in ounces per square yard.

DIAGONAL is a term introduced in the United States about 1875 for a variety of worsteds used in making men's clothing, especially for coats and vests; it is twilled in such a manner that the diagonal ridges are somewhat prominent and noticeable.

DIAPER in textile manufactures applies to the pattern or weave of a fabric. The word diaper is derived from *diasper*, an angled stone once much used for ornamenting jewelry. In the manufacture of cotton and woolen cloth the term is applied to those fabrics which have small patterns of geometrical regularity, such as are produced by the kaleidoscope, or as diamonds, arrow heads, birds' eyes, etc., woven in their texture. In Ireland and Scotland there is manufactured a damask linen called Diaper, also a kind called Union, composed of linen and cotton. There are also cotton goods of this description, including Russia Diaper, which is held in much esteem. The finest linen Diapers with the smallest diamond, fish eye or birds' eye patterns are chiefly used for children's clothing.

DICKEY.—A separate shirt-front worn over the breast in place of a shirt, or to hide a shirt not fit to be seen. These were at one time called *shams*, and were worn over plain shirts for many years in the first half of this century.

DIMITY owes its name to Damietta, a town in Lower Egypt, which was once of great commercial importance, and where first was manufactured the cotton fabric now called Dimity, a kind of stout white cotton goods, either woven corded or in small raised figures, as diaper

patterns, usually 4-4 yard wide and used for white dresses, aprons, and in ornamenting beds and bedroom furniture. Patterns are sometimes printed upon it in colors. When woven corded it resembles pique and marseilles.

DOESKIN.—A compact twilled "woolen" cloth, so called from the imaginary resemblance to the skin of the doe, on account of its softness and pliability. Doeskin was formerly extensively used for men's pantaloons and was dyed black, blue, gray, brown and other solid colors; either three-quarters or six-quarters wide. The finest quality sold in this country is of French manufacture, being far superior in make, finish, and coloring to the American Doeskin. [See WOOL, FELTING, TEASLING and SINGEING.]

DOLMAN.—A variety of ladies' wrap, characterized by a hanging piece over the arm instead of a sleeve, of various lengths, from very short to almost reaching the ground. From Turkish *dolama*, which is a long robe open in front and having narrow sleeves buttoned at the wrist, worn by the Turks over their outer garments.

DOMET.—A loosely woven soft cotton material of the flannel family, napped slightly on both sides, varying in price from 5 to 15 cents per yard. There are also Domet shirtings, being the same organization made in stripes, checks and plaids.

DORNOCK.—So called from being manufactured originally at Dornock, Scotland. A stout, figured linen, now generally used for checkered table linen. Also sometimes called Dornic, having a simple diaper pattern.

DOWLASS, like many other names of cloths, is from a town-name, said to be from Dowlais, France. Until the introduction of machine-woven cotton cloth, Dowlass was a strong and coarse linen fabric, used for purposes not requiring fine linen, principally common shirting, ladies' skirts and chemise; it is a species of what was known as holland, q. v. The name is still perpetuated in a strong calico made in imitation of the cotton fabric.

DOYLEY or DOILEY.—Said to be so called from the name of the first maker—Sir John D'Oyley, A fringed napkin made of linen or cotton, white or colored.

DRAP DE ALMA.—A fine, close, flat-ribbed twilled dress fabric of wool, or silk and wool, finished on but one side; somewhat heavier than cashmere, or Biretz. The twill weave of Drape d Alma is very similar to that of Satin Royal, and only different from a Satin Rhadame twill in the diagonal lines being closer together.

DRAP 'D TE is a species of ladies' worsted dress goods, woven in fine longitudinal cords, sometimes dyed in shades of brown and drab, but usually black; also used for men's summer coats and vests.

DRAPER. — *Drap* is French for cloth, and draper in England, and drapier in France are the terms used to designate a dealer in cloth, or clothing, dry goods or textile fabrics of any description; synonymous with merchant, or dry goods merchant in the United States. The Drapers' Company, of London, is a very important and influential body of merchants, having been incorporated since 1364, and at the present time owning two large buildings called Halls, where they hold regular meetings twice a month. The company is a combination board of trade and benevolent association, and their objects seem to be to secure special city legislation favorable to their business, and to assist unfortunate members who are worthy. Some of the company's rules are of great interest; apprentices are received as members by paying a certain fee, and the company becomes responsible to an employer for their actions. If these apprentices become wayward and need correcting, they receive a flogging by two tall men disguised in canvass frocks and hoods, twopennyworth of birch rods being expended on his moral improvement.

DRILLING. — (From Ger. *Drillich-drei*. 3.) A three cord twilled material of either linen or cotton. There are two varieties, one used by tailors, and in the manufacture of underwear—known as bleached and unbleached; the other a finer woven, better finished material, known as dress drilling and found in all colors.

DRUGGET. — (From Fr. *droquet*—trash.) In the carpet department is known as a large square rug or mat, used as a protection for carpets under tables, etc.

DUCK. — (Scotch *Dooch*. Sw. *Duk Cloth*.) A species of coarse linen or cotton cloth, never made with a twill, commonly used for making sails, tents, awnings, sacks, bedding and overalls. It is made in various colors and widths. The quality is denoted like Denim, by the weight of the cloth in ounces per square yard.

DUTCH carpet is a very strong and cheap wool carpeting, usually woven in stripes and checks. The tariff on imported Dutch carpet is 14 cents per yard, and 40 per cent ad valorem. [See CARPETS.]

E

ECRU is the French word for "raw," or "unbleached," when applied to linen, silk or other textile fabrics. In the United States the same meaning is attached to the word; as having the color of unbleached silk or linen, hence by extension having any similar shade of neutral color, as the color of hemp or hempen cord.

ELASTIC WEB is a material woven in bands from half an inch to twelve inches in width. The rubber slips are cut from wide thin sheets of india-rubber q. v., and these lie parallel to the warp in weaving. Ordinary silk and cotton elastic is woven plain, or "single," but the heavy grades for suspenders etc. are woven "double," that is with two warps and two wefts, [see WEAVING] with the strips of rubber in the center of the two webs. First manufactured in 1820.

ELECTORAL CLOTH, OR BIRETZ.—A dress fabric of wool or silk and wool, with a Cashmere face upon one side, and a round close-ribbed or "repped" surface on the other, usually made reversible. [See EMPRESS CLOTH.]

ELL—A measure of different lengths in different countries, used exclusively for measuring cloth. The English Ell is 45 inches, and is identical in meaning and origin to the word *aune*, which is also a cloth measure of one yard and a quarter. Both of these words are derived from the Latin *alna*, forearm or elbow.

EMBROIDERY is the art of working with the needle flowers, leaves, vines and other forms upon wool, silk, cotton or other woven texture. That it is of the greatest antiquity we have the testimony of Moses and Homer; and it takes precedence of painting, as the earliest method of representing figures and ornaments was by needle work traced upon canvas. In mediæval times embroidery was the chief occupation of women of all ranks, from the palace to the cloister, and sharp rivalry existed in the production of sacerdotal vestments and ornaments. Nuns embroidered robes adorned with sacred subjects; girls produced admirable embroidery decorated with appropriate designs for the benefit of the monasteries; chasubles and mantles were embroidered on silk and embellished with gold and gems by the the fair hands of queens and princesses. From the 9th to the 15th century was a glorious period for needle work. Not only were figures and portraits produced, but also floral, rococo and arabesque ornamentation; flowers in the grandiose style, wrought with arabesques of gold and silver, were characteristic designs of the period; and heraldry offered an opportunity for embroidery upon the surcoats and tabards of men-at-arms.

From an industrial point of view the art may be ranged into two classes. First, that described above, in which Persia and the extreme East are the greatest masters in modern times; second, white embroidery applied to dress and furniture, upon cloth, cambric, swiss, etc., in which Switzerland holds first place and France next. The manufacture of Hamburg embroidery has of late years become as prominent an industry as lace making. Begun about thirty years ago at St. Gall, Switzerland, with one machine, the demand has so increased and the work so spread that there are now said to be in use 25,000 machines making flat-stitch embroidery, and employing a vast army of operatives of all ages.

EMBROIDERY SILK in fancy colors usually come put up on 10-yard spools, each spool being equal to four ordinary cards or skeins. All colors except black and white are EE in size (equal to No. 300 in knitting silk). Black and white come in four sizes, E, EE, F, FF, from fine to coarse in the order named.

EMPRESS CLOTH was first made for and worn by Empress Eugenia of France, hence the name. It is a rather heavy dress goods, with a finely repped or corded surface, frequently with a cashmere or satteen twill on the opposite side; also called Biretz and Electoral cloth.

EPINGLE is a French word signifying small, fine pin wire. The term is descriptive of the fabric, as Epingle is a thin silk, woven with rather heavy raised cords, as if a fine wire had been inserted in place of the welt to make the cords more prominent, though in point of fact, hard twisted "worsted" threads are used for this purpose in the better grades, and cotton for the cheaper. The patterns in Epingle silks vary, sometimes there being but a single cord at close and regular intervals and again two or three together at different distances apart. The cords have a high polish, forming a contrast with the lustreless ground. This silk is frequently found in ribbons and neckties.

ESTAMENE is a French all-wool cloth, something like a serge, but having a rough, nappy face. Being made in different qualities, it varies considerably in price, but uniformly measures 25 inches in width. It is employed for women's dresses. In weather suitable for the wearing of serge, estamene might be a fitting substitute, but at the same time is a superior kind of dress material to the former.

EVERLASTING.—A very durable white cotton edging, distinguished by being made in rows of continuous holes surrounded and separated by a light flat braid or cord. Its width is indicated by the number of rows of holes, from one-hole narrow to eight-hole wide.

F

FABRIC.—Manufactured cloth; texture; stuff; cloth.

FACTORY originally implied the residence of factors; that is, agents or brokers, whose duty was the buying or selling of goods for merchants residing elsewhere, to see them packed and shipped to the persons for whom they were bought. The modern significance of the term is a building or group of buildings appropriated to the manufacture of goods. The factory system has arisen from the rapid growth of the woolen and cotton industries, and the consequent subdivision of labor which rendered necessary the centralizing of various departments of manufacture. It has gradually grown to its present dimensions since 1770, through the invention of the humble barber of Preston, Richard Arkwright, who is generally regarded as its founder. Prior to this time silk, woolen, linen and cotton yarns for weaving were spun by hand, a single one at a time, but with the aid of Arkwright's spinning frame, a vast number of threads of any degree of fineness and hardness can be spun. It consists of several pairs of rollers, turned by means of machinery. The *lower* roller of each pair is fluted or furrowed, and the *upper* one is covered with leather, to make them take hold of the cotton, wool, etc. If there were only *one* pair of rollers, it is clear that the fibre passed between them would be drawn forward by the revolution of the rollers (similar to running clothes through a clothes wringer); but it would merely undergo a certain degree of compression from their action. No sooner, however, has the fibre begun to pass through the first pair of rollers than it is received by the second pair, which are made to revolve four times as fast as the first pair, and so on through the other sets of rollers. By this ingenious contrivance the mass of cotton, wool, etc., is drawn out into a thread of any desired length or fineness. Such is the principle on which Arkwright constructed his famous spinning frame, the idea of which he accidentally derived from seeing a red-hot iron bar elongated by being made to pass between rollers.

Cheap coal or abundant water power is no longer as it once was, the first requirement of the factory owner; it is still an important one, but it has become secondary to that of cheap transportation. There are parts of New England the water power of which is possibly great enough to supply the motive power for all the spindles and looms in the country, and yet in districts which once were centers of cotton and wool manufacture, of large and contented communities of working people, there remain in abandoned works and deserted tenements nothing but monuments of a former population and prosperity. The cheap motive power is still there, but the greater desideratum of cheap transportation is lacking, and because of it poverty and ruin prevail in many of

the once prosperous districts of New England. The factories are slowly and surely moving West and South, following the center of population. It is predicted that another generation will see the cotton manufactures of this country entirely produced in the South, on account of recently developed railroad facilities and the nearness to the raw material. The ten years between 1880 and 1890 witnessed an increase of 10,000 looms in seven southern states, and it is estimated that these states produce 34 per cent of all brown cottons manufactured in the United States.

FACTORY COTTON is unbleached cotton muslin, as opposed to bleached or imported fabrics; also called "factory" and "domestic."

FACTORY YARN is coarse unscoured woolen yarn, or yarn "in the grease." It is usually made by the interior woolen mills, and is used by country people for knitting heavy winter hose. It is generally put up in hanks four-to-the-pound, and unlike fancy yarns weighs out full sixteen ounces per pound.

FAILLE was, in the 16th century, the name of a peculiar heavy silk veiling worn at first by nuns, but later by women of all classes. The word has had different meanings at different times. At present it indicates a popular variety of soft, ribbed dress silk having a grain or cord not so heavy as an Ottoman cord, but about twice as large as that of grosgrain. Sometimes called Faille Francais. [See SILK.] It is soft in quality and has but little gloss, generally looking better in light than dark colors.

FANS.—The use of the gorgeous peacock fans by the attendants of the Pope on grand ceremonial occasions—stately and superb, and lending their splendor to the scene, is a survival of the custom of the slave waving a fan before a priest of Isis, and made of feathers and painted at the top, a shape which the fan was adopted into Greece; a natural shape, representing the joining of two fowl wings, of which the fan was doubtless first constructed. The fans that stir the air before the rulers of India and China are of the same shape as noted above; but in Japan today, where the fan is as universal as a garment, its shape is that of the folding affair as we have it in this country, shutting up into a stick. Whether Catharine de Medici obtained this folding shape from the East or not, is unknown, but at any rate she introduced it into France and covered it with painting and jewels. A little later one set with diamonds of great cost and beauty was presented to Queen Elizabeth of England (1491). Possibly the fan came into Spain from Mexico; if it did not its use was greatly increased with the coming of Mexican wealth and dazzle, as the Emperor Montezuma had several of gold and the wondrous feather-work of his country, beautiful as any painting. But from whatever source it came, the Spanish senoretta adopted it at

once unto the armory of her attractions, and has handled it to perfection ever since.

If it is degraded today into the palm leaf, into the bamboo and paper arrangement, into the home-grown "turkey wing" or into the whirligig machine set on the table to drive away flies, it does not signify that fans are less precious than of old; but that common people are disposed to be more comfortable than once they were. The tariff on fans of every description, except palm leaf, is 35 per cent.

FARMER'S SATIN.—A lining for men's coats, made with cotton chain and wool filling, finished with a high lustre. It is called Italian cloth by tailors and has been superseded to some extent in recent years by serge, which is a cloth with the same organization, but woven 3-leaf twill like cashmere, etc.

FASHION, or as the French term it, *La Mode*, admits as little of an exact definition as of being referred to as an intelligent principle. In every age and in every country, there has been a recognized costume or general style of male and female attire, along with certain niceties in the color, shape and texture of dress, which, fluctuating according to taste or caprice, are known as Fashion. This whimsicality constantly begins and ends in two things it most abhors—singularity and vulgarity. It is the perpetual setting up of a certain standard of taste and elegance formed by the prevailing distraction of the moment, and then disowning it; which was yesterday ridiculous from its being new, and today essentially proper, will tomorrow be odious from its being too common. To quote the words of Hazlett, "It cannot be lasting, as it depends on contrast, change and shifting; it cannot be sterling, for if it were, it would not depend on the breath of caprice; it must be superficial to produce its immediate effect on the gaping crowds, and frivolous to admit of its being assumed at pleasure by those who affect to be in the fashion, to be distinguished from the rest of the world. It is not anything in itself, nor the sign of anything, except perhaps the sheer vanity of those people whose very existence depends upon what others may think of them. It takes the firmest hold of weak, flimsy and narrow minds; of those whose emptiness conceives of nothing excellent except it be regarded in like manner by others. Fashion is the abortive offspring of vain ostentation and exclusive egotism; it is haughty, trifling, affected, servile, despotic, mean and ambitious, precise and fantastical all in a breath, tied to no rule and bound to conform to every rule of the minute." She is the arbitress of weaver and dyer, and the terror of wholesale and retail buyers, and yet their main dependence for profits. If stamped out of existence in a night, the next morning's sun

would shine down on a million work people who depend upon her for a livelihood.

FEATHERBONE is a substitute for whalebone, patented in 1882, made from the quills of domestic fowls. The quills are slit into strips which are twisted, and the resultant cords are wrapped together with fine threads and pressed flat. [See **WHALEBONE**.]

FEATHER CLOTH.—This is a mixture of cloth and feathers woven together, the cloth being undyed and is produced in drabs and grays; this curious material usually measures one yard and a half in width. It has a very unfinished appearance, as the feather ends protrude from the face here and there throughout, yet are woven into the web sufficiently well to preclude their falling out. The cloth is naturally a warm one, comparatively light, and probably waterproof, without being rendered so by artificial means. **Feather Cloth** is also the name applied to a variety of extremely lightweight silk and wool material, woven with a basket pattern; so called, it is presumed, on account of its feathery lightness.

FELT and FELTING.—Felt is a kind of cloth made without spinning or weaving, but simply by the mutual adhesion of the scaly wool fibres. This peculiar property is most distinctively developed in the short or "carding" wools, but all wools possess it to some extent. [See **WOOLS**.] Felting properties are also found in the hair of other animals; the rabbit especially supplies the finer felts used for hat making, while the beaver hat was a felt of pure beaver fur. Felted cloth is made by the combined influence of heat, moisture, pressing and rubbing on an evenly spread out mass of fine carded wool. The wool is carded out into a lap of extreme thinness, but of a length and breadth sufficient for the size of the cloth to be made. Several of these carded laps are super-imposed on each other till the requisite thickness of the material is obtained, the two outside laps being made of better material than the body. This combined lap is now passed between several pairs of rollers which press against each other partly immersed in a trough of water, the upper roller being solid and heavy, while those under are hollow and heated by steam. The upper rollers all have a zigzag motion, so that the material is crushed and felted as it passes on. This is frequently moistened with a felting preparation, and the rolling and pressing continued until the cloth is duly condensed and of a leathery consistency, when it is dyed, printed and finished like ordinary cloths. In the manufacture of cheap felt a woven cotton body is often used, and a lap of felt attached to each side. This can hardly be detected by examining the face of the felt, but by cutting, the warp and filling of the cotton body is easily perceived.

FICHU is the French word for ladies' neckerchief. A triangular piece of lace worn around the neck instead of a collar; of various lengths: sometimes it is a combination cape and pointed between the shoulders, and a scarf crossing the bosom, the long ends of which are allowed to hang loose. It was a favorite article of attire with Marie Antionette, of France, in 1786.

FILOSELLE, or filling silk, is a loose, slackly twisted thread used in fine art needle work. It comes in skeins, the strands of which can be divided or separated into six smaller ones, each suitable for being used in fancy work.

FILLING.—That which fills up. The woof or weft in weaving.

FLANNELETTES are napped cottons; also called Outing Flannel, Gypsy, Tennis, Yachting, Seashore, etc. All these are but flannel imitations which originated with the demand for a lower price fabric of the flannel class.

FLANNELS are made of "woolen" yarn, but slightly twisted in the spinning, the object in view being to have the cloth soft and spongy, without particular regard to strength. Wales appears to have been the home of flannels (Welsh *gwlanen*) and the high estimation in which Welsh flannels are still held is attributed to the fact that hand labor is nearly altogether employed in their production. The manufacture of flannel is almost the same as that of other woolen goods [See WOOLEN], though there are certain wools which are used more for Flannels than for any other textiles—notably the short and curly staple wool of the Southdown breed of sheep, the Cottagh and Merinos.

Flannel is recommended by medical men as clothing both in hot and cold countries, from its property of promoting insensible perspiration, which, being absorbed by the material, is immediately distributed *equally* throughout the whole thickness of the substance, and thus being exposed over a larger surface is carried off by the atmosphere, keeping the body at the same time at an equal temperature. Like other woolen fabrics Flannels are bleached by the steam of burning sulphur to improve their whiteness. [See WOOLEN, SHAKER, TRICOT, TWILL, ETC.]

FLOSS SILK is an embroidery thread, or yarn, made of silk fibre, from the finest part of the cocoon, carded and spun; slackly twisted, soft and downy, and finished with a high lustre. It is adapted to a wide range of fancy work, as it may be used singly for fine outlines on light canvas, or doubled for heavier outlines or solid embroidery; very similar to Filoselle, q. v.

FOULARD at first denoted a kind of thin gauze French riband; then a thin piece-silk, generally printed in colored patterns on black or white grounds. An imitation of silk Foulard was next found in cotton.

printed with mingled patterns of a medium soft make, for women's dresses. This latter was formerly much in vogue, but its manufacture is now almost discontinued, having been superseded by satteen, another cotton textile of satin weave, glossy, fine and strong, which answers the same purposes, q. v.

FRENCH PATTERNS.—Among the weavers of Lyons, St. Etienne and other great weaving centers of France, much attention is devoted to anything in any way connected with the beautiful, either in the figure or the color of textiles. Weavers may be seen in their holiday leisure gathering flowers and grouping them in the most engaging combinations. They are constantly suggesting new and tasteful designs to their employers, and are thus the fruitful source of elegant patterns. Hence the French flower patterns are remarkably free from incongruities, being copied from nature with scientific precision. This constitutes the secret of French manufacturing prosperity, for so long as fashion worships the beautiful enough people will be found to purchase the fabrics of France, even though France should be prohibited from purchasing those of other countries. Fashion is to France what the mines of Peru were to Spain, what the wheat fields of India are to England, what the cotton industry is to the South.

FRIEZE.—So called from having originally been made in Friesland, the most northerly province of Holland. A heavy, shaggy, curled-nap woolen cloth manufactured especially for men's winter overcoats. In 1551 the British Parliament passed an act which provided that "After a certain Feast Day all Frieze should be made and wrought in the shires of Cardigan and Pembroke, ready to be sold for a whole piece, and should contain in length 'at the water' 36 yards and in breadth $\frac{3}{4}$ of a yard, and be so fully wrought that every whole piece should weigh 48 pounds at the least, and that every half piece should contain the same weight at the same rate."

The manufacture of Frieze in Ireland has come down from time immemorial. The chief features which distinguish it from all other cloths is its absolute imperviousness to rain and its extraordinary durability. This pertains of course to the genuine Irish Frieze, not the counterfeit which of late is quite plentiful in American markets. The manufacturers of Ireland use particular care to select the longest and best wool from the best washed fleeces. This is first dyed and afterwards, when spun, is doubled so as to resemble yarn. It is then woven, after which it is but through the thickensng or tucking process. This consists of a prolonged washing and sousing the cloth in a carefully prepared solution slowly heated up to the boiling point, and then as slowly cooled again. This shrinks and thickens the fabric to such an extent that it becomes almost impossible, after cutting the goods, to separate

one thread from another, so closely are they fulled and so interdependent on each other.

FRINGE.—An ornamental bordering formed of short lengths of thread, whether loose or twisted, variously arranged and combined, projecting from the edge of the material ornamented. Fringe may consist of the frayed or raveled edge of the piece of fabric ornamented, but is generally of other material attached by stitching. Gold and silver fringe, such as now used for epaulettes, has been worn by ecclesiastics as far back as history has traced the dress of people, but was not adopted in civil costume until the 15th century, since which time it has come and gone at Fashion's dictate, sometimes in the form of knotted and twisted silk and again as the curly chenille. It is essentially a creature of Fashion, depending upon her smile for its ephemeral existence; while her frown is a token for its speedy departure.

FROG.—An ornamental fastening for the front of a coat or ladies' garment originally made of metal or braiding, and consisting of a spindle-shaped button attached by a cord, and corresponding with a loop on the opposite side of the garment. A pair of frogs fixed on the opposite sides of the coat may allow of buttoning it either way. On silk plush cloaks the frogs are generally of sealskin.

FULLING or milling is the one process which is specially applied to woolen goods, its results being shown in the highest degree in broadcloth, doeskin, cheviots, meltons and other heavy cloths for overcoats. Everyone knows how blankets and flannels tend to contract with frequent washing, gaining in thickness and solidity what they lose in length and elasticity; such shrinkage is greatly hastened when woolen articles are rubbed in very hot water. This shrinkage or fulling is the result of the serrated, wavy structure of the wool. The operation of fulling is now performed by a steam fulling mill. The old method of fulling by the stocks is wasteful of power, and the blows the stocks give with the heavy wooden mallets, tend to sometimes tear and bruise the cloth, drawbacks from which the fulling machine is free. The cloth to be fulling is first well saturated with hot soap and water, and pressed and rolled and scoured and rubbed between the rollers of the fulling machine, while so heated and soaped. The more prolonged the operation the more does the material shrink up and thicken, and a piece of cloth may even be fulling till it is reduced to half its original length and breadth. The amount of fulling it receives is the distinguishing feature of many varieties of cloths. In the treatment of broadcloth, doeskin, meltons, and all nap finished woollens the fulling is carried on so far that the fibres become densely matted, obliterating all appearance of the weave and giving the piece more the aspect of felt. Fabrics to which no nap finish

is given are fulled only to the extent of solidifying the substance and strength of the texture. Tweeds are very slightly fulled in order to give them a "dressed" surface. On conclusion of the fulling operation the goods are scoured to free them from the soap, which is very simply done with pure water, which is tepid at first, but is gradually cooled by additions till in the end cloth is worked in pure cold water. [See TEASLING or NAPPING.]

FUR.—Certain animals have a covering upon the skin called Fur, underneath a longer covering called Overhair. The fur differs from the overhair in that it is soft, silky and downy; while the overhair is straight, smooth and comparatively rigid. These properties of fur constitute its chief value for felting purposes, which after some slight preparation, by the aid of hot water, readily unites its fibres into a strong and compact fabric. The overhairs are best managed by spinning and weaving.

Few kinds of animals furnish a pelt of the correct weight and pliability without artificial assistance, and all of them differ widely in texture, shade and fineness; it is these differences which determine their value. A brief account is given here of the most used varieties of fur, with some general remarks as to their average value and customary uses:

Badger.—Overhair coarse, 3 to 4 inches long, black with silver spots. Fur wooly; used for robes and brushes. Value of prime 75 cents per skin.

Beaver.—Overhair 3 inches long, of gray color, with reddish brown ends. Fur thick and fine, of a silvery gray hue or delicate lightish brown. Used in every form and fashion. Best are from Labrador; value from \$1 to \$3 per pound.

Chinchilla.—Overhair and fur of equal length, 1½ inches long, very fine, and like wool may be spun and woven; color gray and black mixed. Best are from Peru; used for muffs, boas and borders on garments, but *never* for overcoats; value from \$1 to \$3 per skin.

Ermine.—Fur soft and pure white, with tip of the tail black. Best are from Siberia; used for muffs, garments and linings; value variable, from 15 cents to \$1.50 per skin.

Fox, Silver.—Overhair thick and fine, 3 inches long, varies in color from a pale silver to a darker hue; fur fine and curly. Its beauty places it at the head of all fancy furs. The choicest are from Labrador; used for muffs, boas, trimmings, linings and garments by the rich. Price \$50 to \$200 per skin.

Fox, Red.—Well known in the United States; from \$1 to \$4 per pelt.

Fox, Gray.—Only found in the United States. Overhair is gray, sprinkled with silver on the back, while the sides are yellow; value from \$1 to \$2 per pelt.

Marten, American.—Overhair fine and flowing, 1 to 2 inches long; fur close and thick; color of the best is a dark coffee brown, of the poorest a pale yellow. The best are from Labrador, always a choice and valued pelt; price of best \$10, of poorest \$1.

Marten, Russian Sable.—These skins are in the highest estimation by furriers. Overhair fine and flowing, of a rich dark shade of a bluish cast. The best are from Siberia; the finest bring \$150, though there are many grades, the poorest selling for \$2.

Mink, American.—This valuable fur vies with the Marten in elegance of lustre. The choicest are of a blue-black shade that is always admired in furs. The best are from Maine and Labrador. It is most abundant in the Middle and North Western States; value of the best from \$3 to \$10 per pelt.

Muskrat.—A well known fur in the United States. Overhair coarse and light brown; fur fine, thick and silky. Available for a great variety of purposes, men's winter caps especially. Best are from New England and New York; very plenty in cultivated regions. The price is very fluctuating, and as the annual catch varies from 3 to 5 million skins, it is difficult to forecast the market value. Usual price for prime is from 25 to 75 cents per pelt. A variety of black Muskrats from Delaware and Maryland fetch double these prices.

Nutria.—From South America, in size and value between the Beaver and the Muskrat. Overhair coarse and rigid; fur short and fine; pelts are too often unsound, and hence the value of the fur is chiefly for hats. Price of dry skins 25 to 50 cents per pound.

Otter.—Comes from all Northern countries; color brown; best comes from Labrador and Canada; value of best from \$5 to \$15.

Otter, Sea.—Found in Alaska. Overhair exceedingly fine, extending but little beyond the fur, which is close, thick, fine and silky; color is brown, occasionally with silver points regularly interspersed. The poorest skins are not more valuable than beaver, but the fine choice skins command from \$100 to \$500. They are almost exclusively used by the nobility of Russia.

Rabbit Fur is largely used in the manufacture of felt hats and fur caps, and is plentier and cheaper than some qualities of dirt. Technically called "coney" fur.

Seal Fur.—Found only in the Pacific and south Atlantic oceans. Overhair coarse and rigid; fur fine thick and silky, and very uniformly distributed. The largest number comes from Alaska, where the United States government allows but 100,000 to be caught annually. Value varies from \$5 to \$15 in the salted state. A few skins are taken on various islands in the Antarctic ocean. This fur is fine beyond comparison; pelts are valued from \$10 to \$15.

Skunk.—A peculiar production of North America. Overhair fine, 3 inches long; dark brown and black and white, thick, glossy and flowing. Many have two white stripes, more or less broad, extending from the head to the tail. It is now easy to deodorize the skin, and the fur has become a popular one in all countries. The best are from New York and Ohio. Value of best from \$1 to \$2.

Wolf.—The largest are from British America and northern United States, chiefly gray-brown in color, with long, coarse, flowing overhair; mainly used in making robes. The Prairie wolf is a variety inferior in every respect. The best wolf pelts bring from \$6 to \$8.

Furs are dyed in a variety of ways to make them uniform in color, and to adapt them to the fashion and taste of the time. Ordinarily this is a cheap and easy process and only becomes an art when employed upon fine skins, from which the overhair has been first removed by "plucking," leaving the *fur* alone on the skin to receive the dye stuff. Among these are the skins of the muskrat, beaver, otter and especially the seal; the last has received very careful attention, as its entire value depends upon the perfection of the dyeing process. Well seasoned seal skins part with their overhair very readily, leaving the fur in all its smoothness. Great care is necessary to prepare the dye of suitable strength, and to infuse the coloring matter into the fur without allowing too much of it to reach the skin, whereby its wearing qualities might be ruined.

FUR BEAVER is the name applied recently to a species of heavy, napped muslin cloth used exclusively for men's fine overcoats. This cloth is double-woven, with the warp in the center and a weft on each surface, made of the finest and most expensive qualities of wool, such as lamb's-wool and fine merino. The surface is finished with a fine heavy straight nap, not rolled into tufts as is chinchilla, but brushed straight and all lying in the same direction. One of the principal advantages of Fur Bearer is that being woven of extremely fine merino wool it produces a light fabric, thus preserving great warmth with very little weight. It has a soft oily feeling, similar to beaver fur, and is often finished with a short nap on the back.

FURBELOW.—(From *fur* and *below*.) A puffed and puckered adornment on a dress or petticoat; any elaborate ornament or embellishment of a ladies' costume.

FUSTIAN.—(From *Fustat*, the name of a suburb of Cairo, in Egypt, whence the goods first came.) Formerly a stout cloth supposed to have been made of cotton, or cotton and flax. It was in use in England throughout the middle ages. In the 13th and 14th centuries priests' robes and women's dresses were made of it, and there were both cheap

and costly varieties. It appears to have been worn where strength and durability were required, and gradually the use of it was confined to servants and laborers. In 1375 the name fustian was also given to a similar fabric woven of wool, the nap of which was sheared.

In present use any stout, twilled cotton fabric with a nap or pile, as corduroy, velveteen, beaverteen, moleskin, thickest, etc., according to the way it is finished.

G

GAITER is the English spelling of the French word *guetre*, originally meaning a "spatterdash," or cloth covering for the ankle and leg, spreading out at the bottom over the shoe. Also a kind of cloth shoe, coming up to the ankle, generally with an insertion of elastic on each side.

GALLOON.—(From Italian *gallone*, finery, ornament.) Originally worsted lace, especially a closely-woven lace, narrow ribbon or tape for binding. In modern use a trimming similar to the above, of wool, silk, tinsel, cotton or a combination of any of these; also a kind of gold or silver lace used on uniforms. Under the new tariff bill the import duty on wool galloons is 60 cents per pound and 60 per cent ad valorem; and on silk galloons but 50 per cent.

GARTER.—An elastic band or other fastening to keep the stocking in place on the leg; especially a band passing around the leg, either above or below the knee. It is not known when they were first worn; necessity in this case must have been the mother of invention, and garters are probably of the same date as the hose q. v. they kept up. A vulgar story prevails that at a Court Ball in London King Edward's mistress, commonly supposed to be the Countess of Salisbury, allowed her garter to drop upon the floor near the King, who taking it up observed some of his courtiers to smile as if they thought he had not obtained this favor merely by accident, upon which he called out "*Honni soit qui mal y pense.*" (Evil to him who evil thinks.) This incident is said to have given rise to the "Order of the Garter," the highest order of Knighthood in Great Britain, consisting of the King or Queen, the Prince of Wales, and fifty others of the bluest blood among the royalty. According to the common legend it was customary among the "faire ladies" of those days to drop her garter near the lover whom she desired to favor; if so inclined the lover picked it up and kept it until they met again; if not, he gracefully returned it then and there. [See ELASTIC.]

GAUNTLET.—Throughout the 12th and 13th centuries, the metal covering for the hand attached to the iron armor worn by warriors, was the "gauntlet." This was at first mitten-shaped, but afterwards separated to contain the fingers, and continued gradually to change until the gauntlet was made of leather with iron pieces sewed on the palms, and detached from the arm covering. The word is derived from Anglo-Saxon *gwantus*, signifying a glove, while *gantlet* is the present French term for glove. Gauntlets are now distinguished by being a long stout glove, for use in riding and driving, loosely covering the wrist and lower part of the arm.

GAUZE is said to have been named after the place of its origin, Gaza, a city of Palestine, known from the ancient days as an important cloth weaving place. Gauze formerly always signified a silk fabric, but is a term now given to fabrics of soft, fine transparent texture, woven of either linen, cotton or silk. When applied to underwear is usually meant the thinnest or lightest variety. **Empress Gauze** is a fine transparent stuff, made of silk, or silk and linen, having a design usually of a flower pattern woven in the silk.

GERMANTOWN YARN received its name from the fact of having first been manufactured at Germantown, Penn., which city at present constitutes the 22d ward of Philadelphia. It is a coarse, heavy "woolen" yarn, extensively used for knitting fancy articles of winter apparel, especially scarfs, hoods, mittens and the like, superseded to some extent in recent years by German Knitting Worsted.

GERMAN KNITTING WORSTED is a strong durable yarn made of "worsted;" that is of wool prepared by the combing process. [See **WOOL** and **WORSTED**.]

GIMP.—(From French *guipure*, to whip round with silk.) A flat trimming made by twisting silk or worsted threads around a stiff foundation of wire; more or less open in design, used for borders of curtains and furniture, trimming for ladies' dresses, etc. **Gimped Embroidery** is a kind of raised embroidery made with a padding of other material, which is entirely concealed by the silk or beads whipped around it; similar to *Passanterie* q. v.

GINGHAM derives its name from the town of its early manufacture, Guingamp, France, in the Department of Cotes-du-Nord. The distinguishing features of ginghams are that they are a close, stout, plain, (untwilled) cotton cloth, woven into yarn-dyed checks or stripes of two or more colors. It differs from calico in the circumstance that its colors are woven in and *not* printed on the cloth after weaving. In the case of **Umbrella Gingham** the whole piece is woven of yarn of one color. A great variety of designs are found in this material, the trade distinc-

tion of gingham being now to a large extent superseded by other terms. **Madras gingham** is the name applied to a variety in which the pattern imitates the waved lines and simple embroidery work of Madras cloth and handkerchiefs. **Seersucker gingham** was originally a thin linen fabric made in the East Indies, having blue stripes alternating with white ones. **Zephyr gingham**, as the name indicates, is a soft fine variety, usually found in small checks and plaids. **Scotch and French** gingham are superior qualities of domestic goods. Small, square checked gingham are designated as "two-by-two," "four-by-four" etc, which has reference to the size of the checks: the two-by-twos having two white threads intersected by two threads of some other color every alternate time; the four-by-fours having *four* threads of each color, and the six-by-six *six* threads of a color crossing each other, and so on. *Toile du Nord* is a French phrase for "Cloth of the North." Standard gingham weigh about $6\frac{1}{4}$ yards to the pound, and count from 60 to 70 threads to the inch.

GLASS CLOTH is a fine linen fabric, usually woven with a slight open pattern of colored threads, like gingham, used originally as a towel for drying fine chinaware, porcelain, glass etc.

GLOVE.—(From Anglo-Saxon *glof*.) A covering for the hand, with a separate sheath for each finger. Gloves were not worn by either sex until the 11th century. Prior to that time the loose sleeves of garments supplied their place by being brought over the hand; long shoulder mantles were also made to answer the same purpose. It was formerly a proverb that for a glove to be good, and well made, three Kingdoms must contribute to it: Spain to dress the leather, France to cut it and England to sew it. But of late, France has appropriated the functions of the other two, they being now said to have the advantage in point of dressing and sewing, as much as of cutting.

The glove industry of the present day is both extensive and diversified, seeing that gloves are now almost universally worn and made of various classes of material. Our cotton and lisle thread gloves come mainly from Germany. Berlin gloves were originally all imported from Berlin and parts of Switzerland, but are now manufactured to some extent by ourselves. The best woolen, thread and silk gloves are made by cutting and sewing together—full regular made,—but commoner qualities are made to a great extent by knitting, in like manner to stockings. The quality of silk gloves is determined by weight and neatness of sewing, the bulk of which are made of Spun silk q. v.

The leather employed by glovers is prepared from the skins of deer, sheep and lambs, goats and kids, the last being by far the most important. [The method of dressing kid and lamb skins is fully described under the head of **LEATHER**.] From a kid skin the materials for three

gloves are obtained. The cutting is performed by punches of the proper sizes, which are provided with a toothed apparatus somewhat resembling a comb, which pricks the points for the stitches. The seams are sewed together with perfect regularity by placing the edges to be united between the jaws of a vice, the holding edge of which terminates in fine brass saw teeth one-twelfth of an inch long, between each of which the needle is passed in successive stitches, by hand, and in this way a neat uniform stitch is secured. Machine stitching is to a small extent utilized in the manufacture of heavy gloves; and can be recognized on account of its always being the regular button-hole stitch. When the sewing is completed, kid gloves are placed in a linen cloth slightly damp and beaten, by which they are rendered softer and more flexible, and are then pressed and ironed.

It is hardly necessary to inform the reader that the term "kid" is a mere technicality, as the quantity annually consumed of leather bearing this name is largely in excess of what could be supplied. It is chiefly made of lamb skins. A few of the finest gloves are made from real kid skins, obtained from those countries where goat's milk and flesh form main articles of food. [See LEATHER, KID.] Kid is valuable in proportion to its elasticity and closeness of texture. Most of the low priced gloves, which are jobbed at \$18.00 per dozen and under, are in reality lambskin. When what is called a kid glove feels unusually stout, it may be considered highly probable that it is only a lambskin in imitation. It must consequently be understood that all good kid, in addition to the qualities already described, must be reasonably thin. Kid gloves are finished either "glace" or "suede." By glace is meant the bright polished finish which has long been in vogue. Suede, or "undressed," signifies gloves finished by removing the thin, almost transparent outer layer of skin, by simply peeling or shaving it off, leaving the glove undressed and lustreless in appearance. Of ordinary kid gloves there are ten different sizes for ladies— $6\frac{1}{4}$ to 8; thirteen different sizes for gentlemen— $6\frac{3}{4}$ to 9; for misses, the sizes are from $5\frac{1}{2}$ to $7\frac{1}{4}$; and for boys, the cadet sizes range from $5\frac{1}{2}$ to $7\frac{1}{4}$. The greatest manufacturing center for kid gloves is Grenoble, in the south of France, where many thousand persons are engaged in the factories.

Buckskin for men's gloves is prepared by the process of shamoying. [See LEATHER.] It is the closest grained and consequently the strongest and best wearing gloves that are made. Its elasticity, though trifling, is sufficient. It may be had in white, drab or buff, all dressed in precisely the same way that chamois skins are.

Dogskin gloves were formerly always made of lamb or goat skin, never of the real canine cuticle, except in rare instances. What were called dogskin gloves existed only in imagination, the advertised dog-

skin goods being in reality made of skins that no respectable dog would recognize as ever having belonged to any inhabitant of the dog world. Lately, however, the difficulties of dressing have been overcome, and now excellent gloves are made of real dogskin, though the quantity is not very large. Only the finer grades are suited to street wear, the heavier skins being finished in oil for hard usage.

Castor gloves have had quite a history. The word indicates the skin of the beaver, but the best French castor gloves were formerly made of thin deer skin, and were soft, durable and expensive. Latterly shaved sheepskin was used, but the goods were unsatisfactory, and Castor "buck" for awhile was in bad repute. These were in turn displaced by American Castors, made of antelope skins from our Western plains.

Mocha Castor is a new leather brought out recently. It is the skin of the Egyptian sheep, and is thin, very tough and durable. It can always be recognized by its rich, velvety appearance. An imitation of it is manufactured from the skins of our native sheep, but it is harsh and gritty compared with the genuine Mocha.

Coltskin is a newcomer for glove purposes, and is an exceedingly fine, smooth leather, suitable for in or out door wear, often put up as "oil tanned buck."

Great progress has been made in recent years in tanning sheep and lamb skins, and they are now rendered so elegant and so durable as to be practically indistinguishable from goat's leather in looks or wear.

In the city of Gloversville N. Y. there are 140 separate glove factories, which manufacture over two-thirds of the entire product of men's heavy gloves in the United States. [FOR TARIFF SEE INDEX.]

GOLOSHES.—(From Spanish *Golacha*, wooden shoe.) The general term used for either lined or unlined rubber foot-wear. The process of making goloshes consists first in placing the raw india rubber q. v. into water in order to soften it and to remove dirt and other impurities; it is then put into a machine which tears it into very small pieces. Still warm and somewhat adhesive in consequence, these small fragments are quickly spread out into a thick sheet, which travels between the rollers one inch apart; the rollers press the fragments together and they adhere slightly in the form of a thick blanket—two feet wide and six feet long. These sheets are next dried and passed between large hollow steel rollers heated with steam internally, which compress the material into thin soft sheets. The chemical materials (sulphur, etc.,) are now added, and sheets are folded up and kneaded well together. This kneading process is performed by passing it several times through the hot rollers, folding it after each, and rolling it into a dough-like mass. When this operation is completed it is finally rolled out into thin sheets, several yards in length, which are reeled off on cold rollers, so as to

allow cooling. It is then ready to be cut up into "uppers" for the cheapest kind of rubbers, which are unlined. The better grades are lined with cotton cloth of different colors, and sometimes with other materials, as felt. The lining is made fast to the rubber sheet by passing the piece of cloth through the rollers simultaneously with the rubber in the last process, a firm adhesion of the two being effected by the heat and moisture. Another machine is so constructed that it produces a sheet thick enough for the soles, and on one surface a roughening is made by engraved lines crossing each other to prevent the soles from slipping in wet weather. Another ingenious pressure forms the heels. After the sheets for the uppers and heels have been cooled and reeled off, they pass through the cutting machines and are here cut in different sizes and shapes. Some cut out the inside linings and the outside uppers for fronts and heel stepping, while others with great nicety cut the heeled soles out. These various parts are now taken to the "makers," usually females, and the cast iron "last" is rapidly covered over with the different pieces, beginning with the lining and insole, the edges of which are cemented with a composition containing gutta-percha, which produces a firm adhesion. The sole is then fitted on with equal facility, and the workman then runs a wheel-tool round the edge and other parts to produce the representation of "seam" marks. They are next coated with a varnish which quickly hardens, and are then transferred to vulcanizing ovens where they are submitted to a high degree of heat, which produces a chemical union between the rubber and other materials mixed with it at the beginning of the operations. When taken from the oven they are removed to the packing room, where they are boxed and shipped. [See ARTICS, ALASKAS, INDIA RUBBER, MACKINTOSH.

GOSSAMER.—A contraction of "Godsummer," is the name given by our superstitious ancestry to the fine filmy cobwebs which float in the air in summer time; so called because these flying webs were considered as being the shreds and remnants of the Virgin Mary's shroud which she dropped to earth on her ascension to heaven. The name now denotes a thin filmy silk veil, made of soft gauze; also any light airy material; specifically, a thin water proof outer wrap, especially for women.

GRENADINE is a French word meaning "wrought silk for making lace." Grenadine dress fabric was formerly made of pure silk, woven in small square meshes or open work, in imitation of certain varieties of lace. At present it is a transparent silk, wool or cotton fabric for ladies summer dresses, having a kind of square mesh or open check made of coarse-like threads.

GROS DES INDES is a silk fabric having a stripe, either of the same or different color worn diagonally across the web.

GROS DES NAPLES is a stout, plain woven silk dress fabric made of thrown organzine silk q. v., in the weaving of which great care and labor is bestowed, hence one of the most durable silk fabrics.

GROS DES TOURS is a heavy corded black silk used for mourning purposes.

GROSGRAIN is from *gros*, thick, and *grain*, grain,—thick grain, showing conclusively the origin of the word and the manner of fabrics they should be. Grosgrain dress fabric was not at first woven of all silk, but with a heavy mohair filling and a silk warp, and was of very close grain or texture. At present it is a firm, close-woven, fine-corded or grained, pure silk fabric, finished with but a very slight lustre. [See SILK.]

GUERNSEY is a close-fitting knitted woolen shirt, much worn by seamen; sometimes called a guernsey frock; similar to a cardigan jacket or jersey, except that it is longer; besides being exceptionally comfortable for rough out-door weather, it covers a multitude of deficiencies in underwear. So-called from having been first worn by the sailors inhabiting the island of Guernsey, in the English channel. [See JERSEY.]

GUIPURE is a French word which means vellum lace. "Vellum" means "parchment," and parchment means sheep-skin, tanned and bleached white fit for writing on. "Cartisane" is another French word signifying a long thin strip of this thin parchment or vellum, rolled round and completely covered with twisted silk; and to make guipure lace these cartisanes were formed into a pattern and held together by stitches called "brides" or "bars," worked with the needle. These cords or cartisanes were either arranged so as to touch one another and be sewed together often enough for solidity, or were attached together in the form of some figure by the brides or bars. In later use guipure means any lace made in imitation of the ancient guipure; also any lace having no ground or mesh, but maintained by brides only. In this sense it is used very loosely. [See LACE.]

GUNNY.—This name is applied to cloth or bags made of jute, originally manufactured in Bengal, India, but at present the industry is centered at Dundee, Scotland, modern machinery having supplanted the hand work of the Hindoos to a great extent. In lower Bengal the manufacture of this bagging is still a great domestic industry in the over populous districts. It pervades all classes and gives occupation to men, women and children. Boatmen employ themselves weaving it in

their spare moments, husbandmen, carriers and even domestic servants, being Hindoos, for Mohammedans spin cotton only. It forms the never failing resource and occupation of that most humble, patient and despised of created beings, the Hindoo widow, saved by law from the sacrifice, but condemned by opinion and custom for the remainder of her days to sackcloth and ashes, and the lowest domestic drudgery in the very household where once, perhaps, her will was law. Hence the very low prices at which gunny bags are sold. Of recent years, however, American and English trusts have purchased the raw Jute, or the material after it is spun, and shipped it to Dundee and the United States, where it is now largely woven. It is made in several different qualities, and used for sugar, coffee and rice sacks, burlaps, furniture wrapping, backing for floor oilcloths and most important of all, for wrapping the bales of cotton in the South. As each bale requires seven yards of gunny cloth, and the annual product of cotton in this country being between six and seven million bales, the consumption of gunny for this purpose alone is very great. The tariff on Jute butts is \$5.00 per ton and 19 per cent advalorem; on Burlaps 30 per cent; on gunny cloth valued at 10 cents per square yard the tariff is 3 cents per pound and 30 per cent advalorem; over 10 cents per square yard, 4 cents and 40 per cent; valued at 7 cents or less per square yard $1\frac{1}{2}$ cents per pound and 54 per cent; on backing for floor oilcloth 40 per cent advalorem. [See JUTE.]

GUTTA-PERCHA—Is not India rubber as many imagine; the chief difference lies in its being less elastic than rubber. It is obtained from the juice of an evergreen tree, common in the jungles of the Malay peninsula. It is a yellowish, inodorous and tasteless substance, nearly inelastic at ordinary temperature, hard and tough and flexible only in thin plates. Gutta-percha is used for insulating electric wires, hose, belting, combs and other flexible goods, and also as a substitute for leather. Crude Gutta-percha comes in free of duty, but manufactured articles are subject to 35 per cent advalorem.

H

HABERDASHER is derived from *Habt ihr das*, a German phrase for "have you this?" In the 15th century there were two classes of Haberdashers, "those who dealt in small wares, tape, thread, pins, trumpery and ruffraff," and those who dealt in hats and caps exclusively. At present the term implies a dealer in gents' furnishing goods and hats.

HAIR CLOTH is a woven fabric of horse hair. The hair used for weaving it consists of the long hair from horses' tails. It is procured principally from South America and Russia. All the black and gray hair is dyed for the manufacture of black hair cloth for covering furniture. The white is reserved for dying of the brighter hues, such as green, claret, crimson, etc. The quality of the cloth as well as the brilliancy and permanency of the colors depend in a great degree on the nature of the warp, which may be either cotton, linen or worsted. In the manufacture of hair cloth, either plain or damasked, the weaver uses a sort of hook-shuttle which he passes between the threads of the warp or shed toward the left hand; the assistant or server, places a single hair over the end of the hook, and the weaver draws it through the warp. The placing of the hairs one by one renders this a tedious operation, and one that does not admit of the application of machinery, which is so advantageous where the shot or weft consists of a continuous thread. An imitation of hair cloth is made by the use of hard-twisted and highly gummed and polished cotton threads. The duty on hair cloth known as crinoline cloth is 8 cents per square yard; on hair cloth known as hair seating 30 cents per square yard.

HAIR NETS have been used in various forms from the earliest times. Once they were known as cauls; at another time crespine denoted a hair net made of crape; at present in France they are called crespinetts.

HANDKERCHIEF.—The most ancient handkerchief was merely a bit of silk tissue, first used many centuries ago by priests at the altar. For many years, indeed, priests were the only persons in the European world allowed to use handkerchiefs at all, and they used them only at the altar for the sake of propriety. It was then called a "facial" and was left with the vestments of worship when the service was done. Presently the grand ladies of the Court began to provide themselves with similar squares of silk, and "maids and gentlewomen gave to their favourites, as tokens of their love, little handkerchiefs of about three or four inches square, and the gentlemen wore them in their hats as favours of their mistresses." The next step was to embroider the edge of these squares. Soon their convenience recommended them so highly that all the ladies and gentlemen connected with the various European courts adopted their use. The fashion thus introduced by royalty was soon adopted by the under ranks, till today the handkerchief is an indispensable article of apparel.

HANK.—A skein or coil of yarn or thread. More particularly a definite length of yarn, of cotton, linen, silk or wool. A hank of cotton is 840 yards; a hank of linen is 3,000 yards. Silk is not numbered on the principle of cotton and linen. The fineness of silk yarn is determined

by constant length with variable weight, whereas other yarns are indicated by constant weight with variable length. The original standard length of silk was 12,467 yards, 6 inches, the numbers being the weight in deniers of 26 grains. The number is ascertained by the weight of 12,467 yards, 6 inches, in grains, 1-24 of a denier of a hank containing 520 yards, 20 inches. Spun silk is numbered on a different principle. It is determined by the cotton standard, the number of skeins of 840 yards each to the pound making a hank. Woolen and worsted yarns are also numbered in the same manner.

HASSOCK.—A thick hard cushion used as a foot stool; from hassock, a bushy bunch of grass.

HATS.—As now made, felted hats are of three different kinds, plain soft, plain hard and napped or "ruffed" felts. There is a great range in quality, the finest and most expensive being made entirely of fur; for commoner qualities a mixture of fur and Saxony wool or lamb's wool is used; and for the lowest grades wool alone is employed. "Hatter's fur" consists principally of the hair of rabbits, with some proportion of nutria and beaver's fur [See **FUR**]; and generally any parings and cuttings from furriers are also used. Furs intended for felting are treated to a solution of nitrate of mercury, whereby the felting properties are greatly increased. The fur is then cut by a machine from the skin and in this state is delivered to the hat maker. An *all* fur hat may be regarded as the highest achievement of the hatter. An outline of the operations by which a fur hat was formerly made will give an idea of the manual processes, though at present machines are employed to do a large part of the work. The materials of a fur hat consist of a body or foundation of rabbits' fur, and for the nap pure beaver fur. The requisite quantity of this is taken and the whole heated up as in the case of the rabbit fur, until it adheres together in a thin lap. This "nap" is then laid over the "body" and by moistening and gently patting with a brush the cut ends of the hair penetrate and fix themselves into the felt body. The blocking, dyeing and finishing processes in the case of fur hats are similar to those employed in ordinary felts, except that greater dexterity is required on the part of the workman. The nap must be laid on in one direction and rendered smooth and glossy by repeated wettings, ironings and brushings.

Ordinary **Felt Hats** of part fur and wool are made substantially by the same process as fur hats, machines being substituted for hand work. The body of **Wool Hats** is prepared by first carding the wool. On being delivered from the cards the wool "slivers" are wound around a conical block of wood, which revolves slowly with a reciprocating motion, so that there is a continual crossing and recrossing of the wool as

it is wound around the block. This diagonal winding is an essential feature of a wool hat, as thereby the strength is made equal in every direction. When this mat has been wound around the block to the required thickness it is placed over a perforated iron plate through which steam is blown. When well moistened and heated they are placed between boards and subjected to a hard rubbing, to enable them to bear the subsequent strong felting operations. This is done by machinery, in some cases a form of fulling mill is used; but in all cases heat, moisture, pressure, rubbing and turning are the agencies for felting a wool hat. Next follows blocking and shaping as in case of fur hats.

Silk Hats consist of a light stiff "body" covered with a plush q. v. of silk, the manufacture of which in a brilliant, glossy condition is the most important part of the industry. Originally the bodies were made of felt and cork, but now calico is almost exclusively used. The calico is first stiffened with a varnish of shellac and then cut into three pieces, sufficient for crown, side and brim. The side-piece is wound round a wooden hat block and its edges joined by hot ironing; the crown piece being put on in a similar manner and attached at the top. The brim, consisting of three thicknesses of the sized calico cemented together, is now slipped over and brought to its position, and thereafter a second side piece and another crown are cemented on. The whole "body" now receives a coat of size, and subsequently is varnished over; then it is ready for the operation of covering. In covering this body the under brim, generally of merino, is first attached, then the upper brim, and lastly the plush crown and side piece sewed together and drawn over. All these by hot ironing and stretching are drawn smooth and tight, and as the varnish on the "body" softens with the heat applied, "body" and cover adhere all over to each other without wrinkle or pucker. Dressing and polishing by means of damping, brushing and ironing come next. The brim is then only to be curled and bound, the linings inserted and the hat is ready for use. The quality of silk hats depends altogether upon the quality of silk plush with which they are covered. It is a curious fact that this silk plush is all imported from France. A good workman can prepare and iron a dozen "bodies" daily. He can put the silk coverings on and finish about ten, while the brims of fully two dozen ought to be curled daily by a good hand. "Stovepipes" are never made up in larger quantities than are needed for the market, as styles change twice a year, and when a hat has gone out of style it is absolutely valueless. If, however, only the brims change, they can be reshaped by heating and curling.

The silk hat originated in the United States, and was introduced into Europe by Benjamin Franklin. When Franklin was sent to Paris in 1790, he wore the simple attire of the Quakers. A prominent feature

of this was the hat, which has narrowed and heightened into the fashionable "plug" of today. It was then low crowned and broad-brimmed and presented so quaint an aspect that the Parisian dandies were disposed to make it the butt of their wit. Not so, however, with the leaders of the French revolution, who happened to take a fancy to the queer shaped hat, and forthwith adopted it as their own. In three days' time the Franklin hat, as it was called, was the rage in Paris, and from that time—just 100 years ago—the tide has grown in favor, although it is probable that a contrivance more destructive to the hair and more useless for practical purposes was never invented.

Straw Hats.—Straw plaiting is one of the oldest arts practiced by mankind, many specimens having been found in the tombs of the ancient Egyptians, and mention being made by Herodotus and other early writers. In Europe it remained in a comparatively rude state down to the end of the 16th century, when it attained commercial importance in France and northern Italy. The Leghorn straw of Italy began to acquire celebrity late in the 18th century. It is still unsurpassed for beauty and durability. Leghorn is a variety of wheat grown solely for the straw, which is distinguished for its extreme slenderness and whiteness; all of our supply is imported under a tariff of 20 per cent.

Panama Straw Hats are made from the leaves of the screw pine in Central America, and are called Panama on account of the city of that name being the principle point from which the straw is shipped. The green leaves of this screw pine are gathered before they unfold and after the ribs and coarse veins have been removed, are cut into shreds. These are exposed to the sun a few days, and then immersed in boiling water until they become white when they are hung up in the shade and bleached for several days. This gives the straw about the color of lime. A native can plait enough straw for a hat in two or three days, but the finest hats occupy several weeks to complete them, and require especial care in the selection of the straws and plaiting. Good qualities of Panama hats retail for \$25.00.

Manilla Hats are made of the split stems of the manilla tree, a native of the Phillipine Islands. These hats rank next to Panama in point of durability.

Mackinaw is the name applied to hats made from whole bleached wheat, oat, or rye straw. They are plaited by hand and sewed by machinery.

HEMP is a native of India, but has long been naturalized in many parts of the world, notably Russia, Brazil and Egypt. The fibre of this plant constitutes the hemp of commerce. It is obtained in this country by dew-rotting. After the hemp has been cut down with cradles, it is spread upon the ground in October or a month or two later according to

climate; after undergoing the action of dew and frost for about two months, the lint readily separated from the stalk. Hemp is tough and strong and is peculiarly adapted for weaving into coarse fabrics such as sail-cloth, and twisting into ropes and cables and binding twine. The tariff on raw hemp is \$25 per ton and 17 per cent ad valorem; on manufactured, 35 per cent.

HENRIETTA dress fabric was named in honor of the gay and brilliant Henrietta Maria, Queen of England in 1624, and notwithstanding the revival of its popularity during the past few years, its origin in England dates back into the 17th century; though the prominent position Fashion has at present given it among fine dress goods would lead many to imagine it a new-comer.

Formerly Henrietta was a fine black dress fabric, made with silk warp and the finest of worsted weft [See WORSTED], but at present is to a larger extent made of all wool. It is woven with a twilled face and a plain back, and is like cashmere in all other respects except the finish,—being more lustrous. This lustre is due to the fact that after weaving Henrietta undergoes an elaborate process of “finishing,” consisting first of scouring it with hot soapsuds and stretching it on a frame to dry, and also to carefully examine the whole web for the removal of burrs and knots from the texture. Next the cloth is cropped to remove the tips of projecting fibres which were raised in weaving and scouring. To produce the lustre it is now wound tightly around a huge drum and boiled for three hours in water, heated at 180 degrees F. It is then unwound and the ends reversed, and again boiled for three hours. Finally it is pressed in a hydraulic press, in which the cloth is heated either by inserting hot iron plates between the folds, or by forcing steam through it while in the press, the last process adding to the smoothness of the cloth and developing the lustre characteristic of a well finished Henrietta.

HERRINGBONE is a style of twill weaving, so called from its resemblance to the backbone or a herring. This particular weave consists of a series of very short diagonal lines running the entire length or width of the cloth, contrasting with *another* series turned in an *opposite* direction, each series arranged alternately, so as to form a continuous zigzag pattern.

HICKORY CHECKS denote a particular style of shirting, in which the checks are made small and square, and of but two colors, usually blue and white or, brown and white. The name was originally given by some manufacturer to a special brand, from its supposed “toughness” or superior wearing qualities.

HOLLAND, that now is in use for window curtains, was at one time a pure linen fabric, one grade of which was manufactured especially for

fine shirts, collars etc. Until the beginning of the 19th century most of the linens worn in England and France were sent to Holland to be bleached, on account of the bleaching greens occupying so much valuable land in the former countries. For this reason this particular kind received the name of Holland. Through competition it gradually came to be a coarser and more heavily sized material, and with the development of cotton ceased to be used for its former purposes, and entered the department of upholstery. By and by it met the same fate which so many originally linen fabrics have met, the manufacturers substituting cotton, but retaining the former name. At present it is an unbleached, heavily-sized linen or cotton fabric, made in many places, but especially in Scotland; in width from 24 $\frac{1}{2}$ to 115 inches, and all conceivable colors.

HOME WEAVING.—There was a time in the early history of our country when the hardy pioneer clothed and furnished his family with the products of his own fields and loom—clothed them with better woollens and better linens at less cost than can be bought in the Home or Foreign market at the present day. At the time of which we speak, the power loom was not yet invented, and the hand loom factories were scarce and at long distances from the settlements. If an article of apparel specially fine was desired, it could only be secured from New York or Baltimore and transported over the mountains and across the winding rivers upon the back of a pack horse. Money was scarce; the distance was great, and the path to the sea-board rough and dangerous; hence arose the necessity of Home Weaving.

With a hand loom in its simplest form, the wife and daughters of the household would take the yarns prepared at home, and weave such cloth or articles as their condition and circumstances required. For downright durability the cassimere and janes, the table linen, coverlets and "butternut" of this Home Weaving have never been equalled.

The country being sparsely settled and families living far apart, our forefathers could hardly want any other clothing or furnishings than that which real necessity demanded. Modern Fashion had not yet siezed and claimed them for her own. As the new country gradually increased in population, farming along with other classes of business began to assume a more specific and limited form. With the building of towns the settler found that the sawing of his trees into lumber, and the clearing away of his forests for the production of stock and grain a profitable employment. His time had become limited in which to prepare the yarns for his weavers. It was tedious and toilsome work to prepare the linen, with always more or less delay and uncertainty connected with harvesting, flailing, breaking, swingling, heckling, carding and spinning of the flax. In the early days in heavily timbered portions

of the country much time was also consumed in the shearing, washing, scouring, carding and spinning which was necessary in preparing the woollen yarn. The entering wedge to the breaking up and final abandonment of home weaving was the establishing of carding mills in country neighborhoods. These mills would take the farmer's wool, and with improved machinery card it for him while he waited. By and by the mills both carded and spun the wool, the operation of weaving still being performed at home. However, with new inventions for the production of cotton materials, which came to almost entirely supersede linen, and the great improvements made in weaving processes, finally culminating in the power loom, by which cloth was made in a greater variety of patterns, and in so much less time than with their hand looms, these country mills came in time to manufacture all sorts of cloths, yarns, blankets and flannels, and to exchange them with the farmer for his raw wool. These were termed "factory" goods to distinguish them from "homespun."

The Jacquard loom is used solely for weaving figured goods. In this loom a chain of perforated cards is made to pass over a drum, and the strings by which the threads of the warp are raised pass over an edge with a wire or leadened weight of small diameter suspended from each. These weights at each stroke of the loom are presented to each successive card, and some of them are intercepted by the card while others pass through the holes therein, the latter thus determining which threads of the warp shall be raised. In this way the figure of the card determines the nature of the figure on the fabric.

HOOD.—Properly a covering for the head, but frequently worn in modern times as an ornament for the back of cloaks and wraps. It is the most ancient of head coverings, and comes from the Anglo-Saxon *hod*, head; whence comes also our word hat.

HOOKE AND EYE.—A metal fastening for garments, consisting of a hook, commonly made of flattened wire bent to the required shape, and an eye of the same material, into which the hook fits. Under the name *crochet and loop*, this form of fastening was in use in England as early as the fourteenth century. In this country all the hooks and eyes are made in New England, where until a few years ago they were fastened together and sewed on the cards by children at five cents per gross.

HOOPS, OR HOOPSKIRTS were evolved from the farthingale of the 16th century, and we are told that the first woman who wore a farthingale was desirous of concealing the fruits of indiscreet love. They were made of hoops of whalebone run into a cloth foundation, and the style reached the greatest degree and inconvenience about 1610, when they were immense, ridiculous and cylindrical in form." Charles IX.

of France forbid women to wear farthingales more than an ell and a half in circumference, but this naturally caused the dimensions of these articles to increase more and more. Finally the fashion died out in 1675. Hoopskirts next came into fashion in the form of bell-shaped skirts, which were enormously expanded by wire hoops fastened at certain intervals upon the skirt. The time of its greatest extravagance was from 1750 to 1800, and continued with some intermissions until about 1820. Then there was a cessation and hoopskirts slumbered until 1852, when they were again revived in the form of crinoline petticoats q. v., for which were soon substituted hoops composed at first of rattan, but afterwards of flat flexible steel wire, which at times were nearly as large as those of a century earlier; they went out of use again in 1870, but since 1880 have appeared spasmodically in the form of tilters or hoops at different periods.

HOSIERY.—Under this head is embraced a wide range of manufactured textiles, which are classed together more on account of their manner of fabrication than from similarity of use. The term as is quite obvious, has its origin in hose or stockings; but although stockings continue to be one of the staples of hosiery, that department is only one of a great number constituting the entire industry, there being not fewer than 5,000 distinct articles made in the trade. All kinds of hosiery proper are made by the process of knitting, the peculiarity of which consists in the use of a single thread for the entire texture, and in the formation therewith of a singularly elastic yet strong and firm looped web. Hand knitting was first invented in Scotland in 1482, while the first knitting machine or stocking frame was invented in England by William Lee in 1589. These were introduced into the United States in 1832 at Cohoes, N. Y. These machines simply produced a straight knitted strip which was cut off in proper lengths and seamed together to form the stocking. A great improvement upon this was the circular loom, in which a continuous circular web is knit of any length, which is cut up and “formed” or pressed into the shape of a stocking. The shaping of the web to fit the foot is a matter of no little ingenuity. The *flat* web is knit in long strips of sufficient width to make several stockings, which are cut out over patterns on stretching boards, and neatly united at the heel and around its edges by hand knitting or machine sewing. In the case of “full regular” goods the edges of the web are connected by hand, the loops on either side being so neatly taken up and joined as to leave no welt whatever and but slight evidence of a seam. In forming the foot to the *circular* web, a slit is made just above where the heel is to be, half across the web, which allows the part designed for the foot being curved up at the instep and to assume the natural shape. The loops along the edges of

the cut are then taken up on hand needles and the space for the heel is filled out by hand knitting. In the same manner the toe is completed, and thus the stocking is completed without a seam. On other circular machine the entire stocking is knitted and then dampened and pressed into proper form.

A clever hand knitter, if assiduous, will knit 100 loops a minute, while the improved machine knitters will knit of the finest textures in various colors 250,000 loops per minute—an advance of 25,000-fold upon the hand knitter.

A new automatic machine has just been patented which will knit a stocking from beginning to end with out stopping, and with no more attention than the starting of the web. When the stocking is finished the machine stops automatically, breaks the thread and is again ready for the next. One boy can tend half a dozen of these. It also overcomes all difficulties in the narrowing part of the instep and ankle, and by a narrowing and widening process—hitherto never accomplished on any machine—will make several different styles of heel and toe.

In the 16th century the term "hose" was the term applied to the tights worn by Englishmen; these extended from the waist to the toes. By and by when the large puffs around the hips and thighs came into use, the name of stocking or *nether stock*, was assigned to the lower part of the tights. In the progress of time the loose puffs extended lower down on the legs and were termed "breeches" q. v., and so the old and long used word "hose" came to be retained only as an equivalent for stockings. In present use (as either singular or plural) hose denotes a covering for the lower part of the leg, extending to the knee, while short stockings are called half hose or socks q. v. British hose are so-called from the fact of their having been originally imported from England. It is particularly distinguished by being a firm, stout-made hose stained a yellow color which does not fade nor bleach out.

HOUSEWIFE CLOTH.—A linen cloth of medium fineness, used for family purposes in general. In very limited demand at present, having made way for cotton upon the latter's introduction at the close of the 18th century.

HUCKABACK is a corruption of "huckster-back," which originally meant any sort of "peddler's ware." A coarse and very durable cloth of linen, or linen and cotton, woven with alternate elevations and depressions so as to have a rough face. It is used especially for towels, and is made in separate towels or in lengths which may be cut at will. Often shortened to *huck*. At present largely made of cotton, woven with a honey-comb pattern.

I

ILLUSION.—Silk bobbinet. [See TULLE.]

INDIA LINON.—A variety of clear white lawn, put up book-fold. It is woven of very fine selected cotton yarns; the chief difference between India Linon and Victoria lawn q. v. is that the former is a somewhat lighter weight fabric, and having a greater number of counts per inch.

INDIA RUBBER consists of the dried, coagulated, milky juice of various trees and shrubs found in India and Central and South America. This juice is contained chiefly in the middle layer of the bark, in a network of minute tubes, and in its natural state is of a pale yellow color, of the thickness of cream. The natives tap the trees in the mornings and during the day half a pint of the fluid is received in a clay cup placed at the trunk. This at once begins to harden, which is hastened by exposure to the smoke and heat of a fire, and thus the substance acquires its ordinary black color. The crude rubber, as it hardens, is then made into the form of balls or shapeless lumps, in which condition it is received in this country by the rubber factories. At the factory this lump is first placed in a vat of boiling water and softened, next sent to the masticating machine, where it is ground up very fine and mixed with sulphur. After being several times passed through this machine, which is built on the principle of a "sausage grinder," it is worked through heavy smooth rollers under an enormous pressure, which packs it together in the form of a mat. This mat is then thoroughly dried, which requires from four to six weeks. Next it is passed through a series of very hot rollers, until it is sufficiently pliable to admit of being spread upon cotton cloth. This operation is performed between two iron cylinders, the pliable rubber being run in over one and the cloth over the other, the heavy weight forcing it thoroughly into the meshes of the cloth. In this manner rubber, or rubber cloth, of any desired thickness can be produced by regulating the distance between the iron cylinders—from the thin gossamer tissue to a heavy boot sole. [See GOLOSHES AND MACKINTOSH.]

The remarkable substance known as india-rubber is composed of carbon and hydrogen alone, but its exact chemical nature is not by any means known with certainty. It was long used for various minor purposes before its valuable commercial qualities were appreciated. The French in 1751 first gave the matter particular attention, and in 1797 England issued a patent for making waterproof clothing; in 1825 a

merchant of Boston introduced the original Para overshoe in its rough state, as made by the Indians in the province of Para, Brazil, S. A., and soon caused an improvement in its shape by sending the native shoemakers American lasts. In 1833 crude rubber began to be shipped to New York, and rubber boots and shoes were first made in this country in that year. To Chas. Goodyear is due the credit of having devoted much time and money in experiments and improvements in the manufacture of rubber goods, and although he reaped no pecuniary reward from his patents, and although the French and English stole outright his invention of the vulcanizing process, and their courts showed the greatest partiality and dishonesty in deciding against him, yet all countries and all consumers are indebted to Chas. Goodyear for bringing the manufacture of rubber to its present state of perfection.

INDIA SILKS.—Among the many varieties of silks manufactured in India five may be more especially designated as entering more or less extensively our markets. ‘India silks are classed as ‘cultivated’ and the ‘wild.’ Among the former are imported the *Corah*, *Mysore*, *Nagpore* and *Rumchunder*; and from the latter category, or ‘wild silks,’ the *Tusore*, otherwise called *Tusah* and *Tusar*. There is also that called the *Moonga*, a superior description of silk of the same class, but employed in the trade with Arabia. The *Kincobs* are satin textiles decorated with designs in gold flowers, and are employed for ladies’ skirts; the *Mushroos* have a surface of silk, but a cotton back, and are decorated with loom embroidered flowers; the silk brocades are very beautiful, and are chiefly manufactured at Trichinopoly. Those brocades with the white silk flowers are from the Deccan, though usually for sale in Madras. The most costly examples of India brocaded silks are massively embroidered with gold and with silk stripes; the costliest of all, produced at Hyderabad, are very striking in appearance having wavy stripes of rich yellow pink and white combined with gold. Silk stuff manufactured for trousering for home wear is said to be produced of the slightest texture, nine yards of some of which would scarcely weigh as many ounces.

INDIGO is a well known and exceedingly valuable blue dyeing material. The substance has been in use in Europe from an early period, being mentioned by Pliny as Indicum; when it made its appearance in England it was termed Indico. As a commercial material indigo is entirely obtained from the vegetable plant called Indigofera, which grows from 4 to 5 feet high, having bipinnate leaves. It is in the leaves that the indigo-yielding principle chiefly resides, and these are most gorged with it at the period when the flower buds are about to open. It is then that the plant is cut down, in India the same stock yielding in one year the second and even the third crop of stems and leaves. The principal method of preparing indigo in Bengal, where the best quality is made,

is to take the fresh green stems and leaves and beat and bruise them, after which they are fermented in vats of water, depositing a blue substance which is collected and dried in the form of cubic cakes seen in commerce. The different qualities of indigo which come to market are classified according to their sources, as follows: Bengal, Guatemala, Java, Mexico and Brazil, on all of which there is a tariff of ten per cent.

The most important of all coloring matters is indigo, both as regards the large quantity and the monetary value of what is produced and sold, and the permanence of the dye colors which it yields. Indigo is distinguished from nearly all other coloring matters by its complete insolubility in water; the only real solvent for it is acetic acid mixed with a little sulphuric acid, from which water precipitates it unchanged, but this solvent is inapplicable for dyeing. Complete solubility is an essential condition for dyeing, and a means was found to obtain satisfactory solutions of indigo by circuitous methods which involve the temporary destruction of its blue color and a change of its chemical composition. By various deoxidizing agents, indigo blue is changed into a white substance (indigo-white) which dissolves readily in all alkaline liquids, forming a colorless or slightly yellow solution. On exposure to the air the solution yields the *insoluble* blue indigo, and permanently dyes *any* fibre which has been saturated with it. This is the only case in which such a method of dyeing is followed, and on that account it possesses much interest. The number of successive dips that a piece of cloth undergoes varies according to the shade of blue which the dyer desires. The more "dips" the more permanent the color becomes and darker the shade.

INDIGO BLUE PRINTS.—This fine blue color is produced by placing in an immense vat 2000 gallons of water, 20 pounds of ground indigo, 30 pounds of iron filings, 30 pounds of powdered zinc and 30 pounds of lime. A length of calico is then dipped into the vat for fifteen minutes, taken out and exposed to the air for five minutes; the piece of calico, which is white when it comes out of the vat, gradually becomes green and then blue, owing to the oxygen of the air oxidizing the white-indigo and forming it into *blue*, which is insoluble in water and "fixed" on the calico. The number of dips the cloth receives is owing to the particular shade of blue the printer requires.

Patterns on indigo blue prints are produced by discharging the blue with a bleaching liquor. The pattern to be discharged is cut out on two metal plates; several thicknesses of cloth is placed between these plates and an immense pressure applied, the liquor being run in on the uppermost plate, which is grooved to receive it. The *pressure* on the cloth makes clean work by preventing the spreading of the liquor, and the liquor destroys the blue color in all those parts where the pat

terns in the plates allow it to circulate, thus producing the white figure. If any other color than white is desired, it only remains to print it on over the white pattern that has been discharged from the blue ground.

The chemical liquor used to discharge the blue color (in order to make the white pattern) is sometimes very injurious to the cloth, the discharged portions rotting and wearing out much sooner than the solid blue ground. [See CALICO, BANDANNA, TURKEY RED AND INDIGO.]

INFLUENCE OF LIGHT ON DYED COLORS.—The chemical activity of the sun's rays is well known, and certain unstable solutions seem to be decomposed and precipitated more readily under the influence of *light*. It is not surprising, therefore, to find that light should also have a very marked effect upon dyed colors. Under the prolonged influence of light and air *almost all colors fade*, and according to their relative behavior in this respect they are broadly divided into two classes, namely those which are "fast to light" and those which are "not fast to light." Each of the seven colored rays of the spectrum possesses a different fading power. White light is the most active, then follow the yellow, blue, green, orange, violet, indigo and red rays. Direct sunlight is more energetic than diffused daylight. The light of the electric arc acts in the same sense as sunlight, but is less powerful.

According to the best authorities on colors, the presence of oxygen and moisture assists very materially in the fading action of light, so that even some fugitive colors, dyed, for example, with safflower, annatto, orchid, do not fade if exposed to light in dry oxygen, or *in vacuo*.

The term "fast color" generally implies that the color in question resists the fading action of light, but it may also imply that it is affected by washing with soap and water, or by the action of acids and alkalis, etc. In its wide sense it means that the color is not affected by any of those influences to which it is destined to be submitted, but its technical influence is often restricted.

Many colors may be fairly fast to washing with soap and water, and yet be very fugitive toward light; or they may be fast to light, and yet very sensitive to the action of acids or alkalis.

The term "loose color" generally implies that the color is much impoverished, or even entirely removed, by washing with water or a solution of soap; it may, however, also mean that it is not fast to light.

The word "permanent" as applied to color, generally denotes that it is fast to light and other natural influences.

A "fugitive color" is generally understood to be one which is not fast to light, or which volatilises more or less under the influences of heat.

In the absence, then, of any definite meaning being attached to the above terms, it becomes imperative in speaking of the fastness of a color, to refer especially to the particular influence which it does or does not resist.

ITALIAN CLOTH was at one time called Venitian cloth. It is a kind of wool and cotton jean, satin woven, and dyed black, similar in appearance to Farmer's Satin. It is used as lining for men's coats, also for womens' petticoats, and measures one yard in width. The tariff on Italian cloth and Farmers' satin is 8 cents per square yard and 50 per cent ad valorem.

J

JACQUARD, Jean-Marie, the inventor of the apparatus which bears his name. This is not a loom, but an appendage to looms which mechanically selects the warp threads and raises them when necessary. The invention has been applied to many branches of weaving, and has worked wonderful improvement in all. Jacquard was the son of a poor silk weaver of Lyons, and was born in 1752. He was first employed as a bookbinder, afterwards as a type founder and cutter; but on the death of his mother he assisted his father in weaving, and finally, when he inherited a small patrimony on his father's death, he used it in setting up a silk manufactory. This proved unsuccessful, mainly because his time was spent in attempting various improvements in the processes with which he was acquainted. The machine which afterwards rendered him famous is said to have been conceived in 1790, but its execution was delayed by the breaking out of the Revolution, which drove him into the ranks, first of the insurgents, and then those of the army of the Rhine. He saw in an English newspaper that a Society of Arts had offered a prize to any one who should invent a plan for weaving nets by machinery. He set his wits to work, and, for his own amusement, soon produced a loom adapted to the purpose, but he made no attempt to obtain the reward, and, after showing his invention to a friend, put it aside, and for some time it was forgotten by him. To his surprise, he was one day sent for by the prefect of the department, who inquired about the machine, and requested him to make another, the original having been lost or destroyed. That he did, and a few weeks later he was summoned to Paris and introduced to Bonapart. 'Are you the man, asked Carnot, minister, 'who pretends to do what God Almighty cannot do—tie a knot in a stretched string?' Jacquard answered that he could do, not what God could not do, but what God had taught him to do. He explained his device to the Emperor, who rewarded him with a pension of a thousand crowns, gave him employment in the Conservatoire des Arts, and, while thus enabling him to exercise his ingenuity in other ways, encouraged the adoption of the excellent Jacquard loom. That

however, was almost more than imperial patronage could effect." The *Conseil des Prud'hommes*, who are appointed to watch over the interests of the Lyonese trade, broke up his machine in the public Place: 'the iron (to use his own expression) was sold for iron—the wood for wood, and he, its inventor, was delivered over to universal ignominy.' The invention was too valuable not to have found its way into other countries, which, by its means, were enabled to rival, and even surpass, the products of the French loom. Then it was that the Lyonese weavers saw the folly of their opposition, and condescended to adopt the invention of the man they had so cruelly persecuted. The Jacquard apparatus is now extensively employed through the whole of the silk, worsted, and muslin manufactuaring districts of France and England. A short time ago a French manufacturing firm produced one of the most extraordinary specimens of silk weaving that has probably ever been executed. It is a portrait of Jacquard, representing that extraordinary man in his workshop, surrounded by his implements, and planning the construction of that beautiful machinery which now, in its increased perfection, returns this testimony to the genius of its inventor.' This work was woven with such truth and delicacy as to resemble a fine line engraving. There were a thousand threads in each square inch, French, in both the warp and the weft." Jacquard died in 1834.

JACONET is a plain woven cotton fabric, somewhat heavier than linen cambric, having a glazed surface on one side, and slightly sized with pure starch.

JEAN is generally regarded to have derived its name from the town of Jaen, Spain. Originally it was a sort of light weight twilled fustian q. v. At present it denotes a 3-leaf twilled cotton cloth, calendered with a gloss, used principally for waist lining.

Jeans has the same origin as the above, though commonly used in the plural. Much of the "homespun" manufactured in this country, particularly throughout the South, in the early days was jeans. At present it varies exceedingly as to quality, ranging from all cotton up through many gradations to all wool; always twilled and usually found with cotton warp and wool filling; the best selling variety is termed "doeskin janes."

JERSEY.—So called from *Jersey*, one of the channel islands of Great Britain. The state of New Jersey was named in 1664 after this same island. At one time the inhabitants of Jersey spun a fine worsted yarn of select wool of their own raising, and sold it in England for weaving purposes. Jersey Cloth is woolen stockinet, and Jersey Flannel is a fabric much resembling stockinet, but finished with a long and soft-*nap* on one side. A Jersey is a close fitting upper garment or *sacque*, made

of elastic woolen or silk material, and worn with some variation of form by both men and women for the past 200 years. Jersey and Guernsey were names originally given to woven, close fitting vests of coarse wool or worsted, worn by sailors and fishermen in place of jackets, or under their pea-jackets and waterproof blouses. They were afterward adapted for athletic and other sports, and finally by women, especially the Jersey, which was knitted entire (without seams) at first, but subsequently woven of stockinet and also of silk, cotton and woolen yarn. The Jersey was first manufactured for the general market by a firm in the Isle of Wight, England.

JUTE is a vegetable fibre which notwithstanding the fact that it has come under the notice of manufacturers only within very recent times, has advanced in importance with such rapid strides that it now occupies among vegetable fibres a position in the manufacturing scale inferior only to cotton and flax. It is mainly cultivated in Bengal, India, whence comes the great mass of the jute of commerce, 60,000 tons per year being exported. Jute likes a warm moist climate, and could be successfully raised in our Southern States, but for the lack of sufficiently cheap labor for separating the fibre. The inner fibre is separated from the outer hull of the stalk by the process of retting practiced in the case of flax and hemp. The stalks of jute are placed in vats of warm water till the outer hull rots and partially falls to pieces, which action requires from ten days to a month. The native Hindoo then wades into the water up to his middle and takes as many stalks as he can grasp, and removing a small portion of the outer bark from the ends next to the roots, he strips off the dead hull from end, to end with a little management without breaking the fibre; then it is washed off and cleaned by swinging it around his head and dashing it repeatedly against the surface of the water. Next it is dried, the fibre separated and is then ready for shipment to Dundee, Scotland, or the United States, to be spun and woven. An acre of ground produces from 15 to 25 hundred weight of jute. Jute is of inferior quality for ropes, as it does not endure moisture well, but is manufactured in vast quantities for gunny bags, paper, burlaps etc. The tariff on jute is \$5 per ton and 19 per cent ad valorem. (See GUNNY.)

K

KAMPTULICON is a variety of floor cloth which was invented about 1843. The materials and processes employed in its manufacture vary considerably, but it is essentially a preparation of india rubber masticated up with ground cork, the preparation and mixture being effected by repeated passing of the material between grooved rollers. When thoroughly mixed it is rolled out into sheets, sometimes over a backing of canvas by passing it between pairs of wide and heavy steam-heated rollers. In addition to the substances above mentioned, gutta percha, saw-dust, ground leather, boiled oil, resins, pitch, asphalt, and chalk have all been used in Kamptulicon making. The rolled sheets are ornamented by printing simple patterns on their surface. Kamptulicon forms a warm, pleasant, soft and noiseless floor cloth, but the higher qualities, in which india-rubber and ground cork are the main ingredients, are rather expensive, and the manufacture has been curtailed since the introduction of linoleum q. v.

KERSEY indicates either of two very different materials used for men's clothing. 1. Kersey is a compact woolen fabric fulled to a degree completely concealing the warp and weft threads, with the surface afterwards finished with a very short and extremely fine nap, highly lustrous, dyed in solid colors; similar in weight to a melton cloth. Its name is attributed to the manufacture having originated at the village of Kersey, Suffolk Co., England in 1051. 2. Kersey is also the name applied to a coarse diagonally ribbed, or twilled wool and cotton cloth used for men's cheap clothing; usually black and white or brown and white in color. This name is a corruption of *coarse-say*. Say cloth was in the 17th century a kind of coarse serge, made of all wool and of a shaggy appearance.

KERSEYMERE is a twilled, fine woolen cloth of peculiar texture, one thread of the warp being always above, and two threads each of weft. It is of two thicknesses, or double woven (See WEAVING) and is reduced in width by the process of fulling from 34 inches to 27 inches. It is light and pliable. The name is derived from the locality of the original manufacture, on the "mere" or brook which runs through the village of Kersey, Suffolk county, England.

KILT.—(From Irish *celt*, clothes.) In the garb of old Gaul the Kilt was called a filibeg. It is said that a kilt was first made by an English tailor sent to Scotland in 1727 to make the clothing of some soldiers stationed there. While calling upon the manager of some mines near

Inverness, his interview was rudely interrupted by a Highlander running in to take shelter from a heavy shower. The tailor, concerned to see him stand in his drenched condition, suggested that he should change his clothing but was told that it was the custom there to wear but the one long garment, tied at the waist, hence he could not remove it without being entirely naked. The tailor suggested a change but was met with the objection that the Highlanders prided themselves on their manner of arranging the lower part of their loose garment. The tailor then offered to imitate the folds and pleats and sew them permanently with the needle, so that the skirt should be of more service by being separated; and thus the kilt is said to have originated. In modern times it is still a sort of petticoat reaching from the waist nearly to the knees, usually composed of some plaid material and deeply pleated.

KNICKERBOCKER is the term applied to the early Dutch settlers of New York, made famous by Washington Irving. The name has come to be applied to anything regarded as characteristic of Dutch New York at the time of its early settlement. Thus the loose knee breeches represented as worn by the early Dutch settlers are known as Knickerbockers. This name is also applied to a stout fabric originally made of linen warp and woolen weft having a rough knotted surface, used for women's dresses. At present it designates the weave more particularly, as Knickerbocker is made of many different materials, though principally of all cotton. Knots or bunches are formed in the filling at regular intervals, which when woven up appear on the surface of the fabric, producing rough spots or points; largely in use as a cheap winter dress goods.

KNITTING COTTON.—A loosely twisted cotton thread, used for darning purposes, the making of hose, tidies and other fancy articles. It is numbered from 8 coarse to 20 fine. Knitting cotton comes put up 16 balls to the box, each box containing two pounds (8 balls to the pound.)

KNITTING NEEDLES are sold at wholesale by the gross, the sizes varying from 10 coarse to 17 fine, with usually a rise in price of ten cents per size. (See **NEEDLES**.)

KNITTING SILK comes put up in half-ounce balls, all colors, in two sizes, 300 coarse and 500 fine. Each ball of No. 300 contains 150 yards of silk and No. 500 contains 250 yards. No. 300 is equivalent to size E E in embroidery silk. It is made of both "spun" and "reeled" silk. (See **SILK**.) The latter is a strong and elastic thread with a high degree of metallic lustre. Spun silk being made from "waste" or imperfect cocoons that cannot be reeled, is carded and spun like cotton, hence the thread has a dead, lustreless, spongy appearance.

L

LACE.—(From Italian *laccio*, noose, snare, string.) An ornamental fabric of linen, cotton or silk thread, made either by the hands or with machinery. The manufacture of lace by hand is an operation of exceeding nicety, and requires skill and patience of no ordinary kind, the best productions of this fabric surpassing all other textile materials in costliness and beauty. Whether the ancients really had any knowledge of lace making is not known; but there is every reason to suppose that point-lace, the oldest variety known was the work of the nuns during the latter half of the 14th century. It will readily be supposed that an art depending so much on individual skill and taste, would vary exceedingly; nevertheless, all the varieties resolve themselves into a few well marked groups under three distinct classes, viz: Guipure, or Needle-point lace, Pillow case lace, and machine-made lace. The first class is the Guipure, or the true needle-worked lace, whether ancient or modern. This needle-point lace is made wholly with the needle by hand. A pattern is first drawn, usually upon parchment; to this parchment is stitched a stout peice of linen, the heavy threads forming the outline of the pattern are then laid along the main lines of the pattern on the parchment and sewed lightly down. Then the whole design is carried out, both solid filling and openwork, with delicate stitching, chiefly in the button-hole stitch. Its varieties are **Rose point**, in which the figures are in high relief, having an embossed appearance; **Venetian-point**, **Portuguese-point**, **point a' Alencon** and **Brussels-point**, in which the pattern is flatter than in **Rose-point**. **Alencon** is the most important of these, it being the fine lace of the 18th century and made entirely in small pieces and afterward sewed together with invisible seams. It derives its name from Alencon France; **Argentan** lace is usually indistinguishable from Alencon, but often bolder and larger in pattern; **Brussels** lace has a very fine ground net (SEE BOBBINET.) and a pattern of less relief than **Alencon**. The thread used for this lace is of flax and of extraordinary fineness. The finest quality is spun in dark, underground rooms, to avoid the dry air which causes the minute thread to break; to secure light a single beam is admitted and directed upon the work. It is the fineness of the thread, as well as the delicacy of the workmanship which has given to the best **Brussels** lace such celebrity and rendered it so costly. It is often sold at \$1200 a pound, and has been mentioned as high as \$2500. In the old **Brussels** lace the design was worked in with the ground. At the present time it is especially an applique-lace the pattern being first made on the pillow by bobbins and afterwards sewed on to a ground with a needle

In trade the name is often given to very fine laces, no matter where made or of what pattern; **Dieppe** lace resembles Valenciennes, and is made at Dieppe France. It has a regular ground of squares, upon which ground the usually very simple pattern was applied in close-stitch or close-work. **Mirecourt** lace in the 17th century was a variety of Guipure, more delicate and thin in texture than other Guipure; at the present day an applique-lace, made of sprigs of bobbin lace sewed upon grounds often made elsewhere; **Saxony** lace was fine drawn work embroidered with the needle, greatly in favor in the 18th century; in modern times lace of many kinds made in Saxony, especially in imitation of old Brussels.

The second large class is **Pillow-Lace**, sometimes called Bobbin-lace or Bone-lace. This lace is made on a small pillow or cushion, both pattern and mesh being formed by hand without the use of a needle, but by twisting and plaiting the threads together by the use of small bone bobbins. The various threads of which the lace is made are each wound upon a bobbin, and the pattern having been first drawn in pencil upon paper, is attached to the pillow or cushion; pins are next stuck in at regular intervals in the lines of the pattern, and the threads of the bobbins twisted or plaited around them so as to form the net-work arrangement which is characteristic of this class of lace. In Pillow-lace making the number of bobbins is generally equal to 50 to the square inch. If the lace be one inch wide it will have 625 meshes to the square inch, or 22,500 in a yard. The work, therefore, goes on very slowly, though generally performed with the greatest dexterity. The varieties are: **Antwerp** lace, which resembles early Alençon, a so called pot is introduced into the design—that is, a semblance of a vase or basket constantly repeated; **Applique** lace is made by sewing flowers or sprigs, which may be needle-made or bobbin-made, upon a bobbin-lace ground; **Arras** is a white lace made at Arras, France, very strong and inexpensive because of the simplicity of the pattern; **Aurillac** lace is made at Aurillac, in France. It was originally a close woven, solid lace, having much pattern in the mesh and resembling Guipure; **Auvergne** lace is made at Auvergne, France. It is very commonly a pure bobbin-lace, but of many different makes and patterns, as nearly all of the celebrated needle-point laces are imitated in this region. **Bayeux** lace is made at Bayeux, in Normandy; it is a close imitation of Rose-point; the Bayeux pattern is also made in black silk lace, much in demand because made in unusually large pieces, as for shawls, fichus, etc.; **Chantilly** lace is a kind of Blond-lace, of which the popular sort has a ground of heavy mesh or net, and the flowers of the pattern in openwork instead of solid or matted. It is made of non-lustrous silk throughout, so that black lace of this kind is often taken for Thread lace; **Blonde** was originally a heavy lace made of unbleached silk, from the yellowish color of which

the name arose, but now of white, black and colored silk, manufactured at Chantilly, France; Duchesse lace was originally made in Belgium; this lace is characterized by a great deal of raised work, flying patterns and the like, which are used in the somewhat similar Honiton laces; Honiton lace was first made in Honiton, England, Devonshire county, and is remarkable for the beauty of its figures and sprigs. Honiton Applique is made by working sprays, flowers and other parts of a pattern on the lace pillow, and securing them by needle to a net ground made separately. In modern manufacture hand-made sprays are often sewed upon a machine made ground; Honiton Guipure is a lace of large flower patterns, with a very open ground, which is generally sold under the name of Honiton lace; Mechlin lace has the pattern outlined by a flat cord or band, very narrow but distinct. It is usually made in one piece, pattern and ground together. The ground is sometimes a mesh or net, and when of this character the pattern is more varied, sometimes being formed of "brides", or connecting links. Mechlin has been called the prettiest of laces. It is fine and transparent, and is best adapted to summer use, being most effective when worn over colors. Its distinguishing feature is the thread which outlines the flower, and gives to the lace somewhat the character of embroidery; Valenciennes is a very durable lace, always distinguished by having the same size and kind of thread throughout, for both ground and pattern; the thread being extremely fine.

Machine Made lace has worked a complete revolution in the lace trade, so that the prices formerly obtained for hand-made laces can no longer be commanded, whilst machine lace of great beauty has become so cheap and plenty as to be worn by all classes. The lace machine is so complicated it would be hopeless to convey any really intelligible idea of it without a voluminous description of all its parts. One or two points of chief importance may, however, remove any difficulty in understanding its general principles. In the loom there are a series of warp threads placed straight up and down instead of horizontally, and about wide enough apart to admit of a twenty-five cent piece passing edgeways between them. Behind these threads is a corresponding row of flat bobbins, resting on a *bolt-bar*. These are so placed that with the first movement of the machine each bobbin, which carries its thread with it, *passés* between two of the warp threads, and is lodged in another and similar *bolt-bar* in front of the warp. But this front *bolt-bar*, besides a backward and forward motion, has another movement called *shogging*—from right to left. When it receives a bobbin by its forward motion, it draws back, bringing the bobbin and thread through two of the upright warp threads; it then *shogs* or moves to one side, and goes forward again, taking the thread through the text two warp-threads and lodging the bobbin on the

bolt-bar again, one distance beyond its last space; this it recovers by the next movement and it again passes through the first space, to be again received by the front bolt-bar. By these movements the bobbin-thread is twisted quite around one upright thread of the warp; another movement then shifts the bobbin, so that it will pass through the next pair of upright threads, and so carry on its work, the warp-threads moving at the same time. There are twice as many bobbins as there are threads of warp, each bolt-bar having a set which it exchanges with the other, and all being regulated with such nicety, that a width of lace is made in far less time that is required to write this short description. Almost any pattern of hand-made lace may be imitated by machine, each pattern depending upon the variations that can be given to movements of the flat disc-like bobbins.

Cluny lace is a kind of net-lace in which the stitch is darned upon a square-net background. The patterns are usually antique and quaint, old fashioned birds and flowers; a glazed thread is sometimes introduced in the pattern as an outline or center line; **Ecrú** is a modern lace made with two kinds of thread, one plain and the other wound or crinkled, and worked into large and prominent patterns with bars or brides of thread. The name is derived from the common use of materials of ecru color; **Spanish silk** lace, was originally a needle-point lace brought from the convents of Spain. The patterns are usually confined to simple sprigs and flowers, made in close overshot or matted work; **Thread** lace is made of linen thread, which distinguishes it from silk laces, such as blond and modern cotton laces; **Torchon** is a coarse, scalloped lace made of stout and rather soft and loosely twisted thread. In parts of Europe largely made by hand, but that sold in this country is made by machinery. **Crewel** lace is a kind of edging made of crewel or worsted thread intended as a border or binding for garments. **Vandyke**, which comes in cream and black silk, is a combination of light and heavy scroll patterns, in the ordinary double twisted hand-run mesh; the pattern is always outlined by a silken thread. **Guipure**, in the well known black silk lace, has an open and gimp-like mesh, and is made of heavy sewing silk; the figures are usually in set patterns, such as stars and triangles, the lace being bordered by a feather edge, and a shading of finer mesh. **Oriental** lace is made in all colors; the mesh is round and formed of close Brussels net, on which the pattern, usually roses, fern leaves and vines is worked. The edge is scalloped and in some cases more heavily embroidered than in ordinary lace; **Escorial** or **Vichy** has a mesh which is sometimes formed of large open squares and diamonds, and is sometimes close and fine; the designs are of roses, tulips, leaves etc., outlined by a silken cord of glossy finish, a peculiarity in all cases distinguish the Escorial from other hand-run laces. **Spanish Matlasse** is a silk lace, the mesh of which

is a medium weight of Brussels net; the design though usually in rose pattern, varies considerably, and in many cases ferns and scroll work are used; the pattern is always outlined by a thread which in the best makes is always more glossy than in the cheaper qualities. **Spanish Overshot** is formed after the pattern of the Matlasse with the addition of a loose thread worked over the top of the design; it is the cheapest of the Spanish laces. **Spanish Guipure** has a Guipure q. v. mesh, already described being open, irregular, and crossed with small loops or brides; the designs are the same as in Matlasse and Overshot.

LADIES' CLOTH is the title by which is distinguished a class of fine, wide flannels, used for making ladies' light weight wraps and dresses. Ladies' cloth is the best and most expensive description of flannels, being woven of superior wool and rarely, if ever, adulterated with an admixture of cotton; ordinarily 56 inches in width.

LAMBREQUIN has passed through several stages of evolution to reach the particular place it at present fills among dry goods. In mediæval times lambrequin was a piece of cloth worn by a knight over his helmet, for protection from heat and dust. Next it is found in architecture and painting, and the lower edge of lambrequins in such decorations is always represented as jagged or scalloped, but consisting of graceful outlines suggestive of the lambrequin floating from a knight's helmet. At present the word indicates a piece of textile fabric, or leather, hanging by one of its edges, and having the opposite edge slitted, scalloped or otherwise cut in an ornamental manner. In upholstery a sort of curtain covering the upper part of an opening, as a door or window, and often forming a fancy cornice to the curtain proper.

LASTING is a contraction of everlasting. A stout, closely-woven worsted cloth used for covering buttons, making ladies' shoes and gaiters, etc., dyed black. It is woven with a double warp and a single weft, twilled.

LAVENTINE is the name of a cheap thin silk used for sleeve linings.

LAWN in 1423, when first woven, was a fine, thin linen fabric, much used for kerchiefs, ruching and for the sleeves and other parts of the dress of bishops of the Angelican church. By some authorities the word is said to have been derived from the town of Laon, France, near Cambray, which gave the name to Cambric. It is well known that fabrics frequently take their names from the place where they first acquired excellence, and retain them long after the local manufacture has been transferred elsewhere. Chamber's Encyclopædia, however, states that fine, light linens received the name of "lawn" on account of having been spread out upon the smooth, grassy lawns to bleach, instead of

on coarse and more ordinary grass—which is probably the correct origin of the term, as exposure in the open air to the action of sunlight and moisture was the only known method of bleaching linen at that period. Lawn at present is a thin open cambric, slightly sized with pure starch, used for many purposes, but mainly for ladies' summer dresses; applied in the trade to various fine sheer muslins; found in both linen and cotton, printed fancy and solid colors. *Linon* is the French word for lawn. Cobweb Lawn, as the name indicates, is a fine, gauzy variety. Cypress Cloth was the name formerly applied to black lawn for mourning purposes; at one time was identical with black cotton crape, so called on account of cypress branches having been anciently used at funerals as emblems of mourning. Victoria Lawn is white cotton lawn made in many qualities, named in honor of Victoria, Queen of the English.

LEATHER.—Since the day that Adam and Eve exchanged fig leaves for furs, the human animal has had a habit of clothing himself in the integument stripped from his dumb brothers. Where or when hides were first converted into leather no wise man ever pretends to know. Doubtless the process was evolved, not invented. Leather antedates the earliest records, and no savage tribe has yet been found ignorant of some way to dress skins. American Indians are masters of the art; rude as are their processes the product is far ahead of the white man, the buckskin of their moccasins, leggins and so on being a positive luxury to the touch, so soft and pliant it is. Neat cattle furnish hides for more than half of the world's leather. Next to them come goats, and after them sheep and East India buffalo. Horse hides are inconsiderable in amount and of low value. Pigskin used for saddles and heavy gloves is in limited demand. Dogskin and ratskin for gloves are mere items of account, not at all equal to the kangaroo skin, which has quite superseded some grades of calf, while deer hides furnish glove leather as well as for a variety of other purposes.

Our home supply of hides is far below the demand, in spite of all the cattle upon our 10,000 hills, not to mention the plains of Texas and the ranches of the west. Old Mexico furnishes us with many steer and goat hides, and ranks next to South America, whence comes two-thirds of our supply. In 1889 New York alone imported over \$6,000,000 worth of hides. The heaviest, consequently the best of hides come from South America. They weigh over 20 pounds each, and fetch 16 cents per pound. These all go for sole leather and machine belts. Cowskins and those from young animals furnish the "Kip" leather of commerce, while the hides of animals a year old or under furnish the many varieties of calfskin. For cheap work both kip and calf are often split—that is divided by machinery into two sheets, each by courtesy called leather. It will wear for a day, or a week, but is about the most unsatisfactory investment the

bargain seeker can make.

Oak bark, hemlock bark, and the powered leaves of sumach are the things that supply tanning.

Oak tanned leather may be distinguished by its being almost colorless, or a very light shade of tan, and sometimes nearly white. It fetches a cent or two more per pound than any other kinds, and is invariably used when a leather of peculiar strength and toughness is required.

Hemlock tan makes a leather hard and brittle, and imports to it a red color, which latter is against it as far as appearances are concerned. The bulk of leather is of this tanning, as it is cheaper.

Sumach makes leather almost as light as oak, gives some fineness, and makes it soft and pliable.

Once through the vats the heavy hides are washed again, and scraped anew on the flesh side, curried with tanners oil, whose source is those cod livers that are not fresh enough for medicine; then steam dried, pressed between hot rollers and sent to market the "sides of sole leather" that everybody knows. Kip skins go through much the same process, only less so. Being thinner it requires less time and care. More chemicals, too, are used in tanning it, and when finished much of it is blacked ready for the boot or shoe makes. Nearly all of the finest calf skins are imported from France, owing to the fact that the bark of the ever-green oak peculiar to that country, gives the leather a peculiar softness and fineness of grain not produced by the oak bark of America.

Alligator.—Since 1860 leather has been tanned from the skins of the Alligator, principally procured in Florida, and the tanning a considerable industry at Jacksonville. The parts of the skin used for leather are the belly and flanks, and these portions are steeped in lime and tanned by any of the processes above mentioned.

Kangaroo Leather.—So popular has this become in the past eight or ten years, that the Australian government which began by offering bounties for Kangaroo scalps, have now decreed a close season, six months long each year, to prevent the extermination of the animal. Its skin comes to this country via Calcutta, and furnishes a leather pleasant enough to the foot, but liable to stretch out of all shape if wet and not carefully dried. These skins are both tanned and tawed, the principal tanning agent being the mimosa bark which abounds in Australia. The leather is very similar in appearance and texture to fine goat.

Russia Leather was originally, as the name implies, a specialty of Russia, where it was made from the hides of young cattle, and dressed either brownish red or black color, being used for "upper" leather, book-bindings, purses and similar objects. Russia leather is now made throughout Europe and the United States. Horsehide, and calf, goat and even "splits" are now finished as Russia leather; but most of these are decid-

edly inferior in quality, and, as they are merely treated with birch bark dye to give them the odor by which Russia leather is recognised, they scarce deserve the name under which they pass. Genuine Russia leather is tanned like other light leathers, except that willow bark or spruce fir bark is used. After tanning and scouring, the skins are treated on the flesh side with an empyreumatic oil obtained by the dry distillation of birch tree bark and buds, to which the peculiar smell of the leather is due. The brownish-red color commonly seen in Russia leather is given by dyeing with a preparation of brazil wood rubbed over the grain side with a sponge. Black colored Russia leather owes its color to repeated stainings with acetate of iron. The leather if genuine is very water-tight and strong, and owing to its impregnation with empyreumatic oil, it wards off the attack of insects.

Morocco.—Originally morocco leather was a product of the Levant and Turkey, and even at the present time in the City of Morocco there are 1,500 men employed in its manufacture. Formerly all this leather was made of goat skins tanned with sumach, and finished either in black or bright colors. Now, in addition to the genuine morocco made of goat skins we have imitation moroccos, for which split calf and especially sheep skins are employed. As the appearance of morocco is the result of the style of graining (a sort of "crape", or goat grain), it can be artificially produced on any kind of thin leather properly tanned.

The preparation of skins for morocco leather must be conducted with care. The skins being dry and hard when received, are first soaked and softened. They are next steeped in lime, unhaired, fleshed and bathed in a preparation of moistened dog's dung. After undergoing the influence of this operation the skins are washed and the remaining hairs and dirt removed with a knife. They are then put into a drench of bran and water for purification, when they are ready for tanning; but the best consists in treating the skins to an already used sumach infusion, and by the gradual working of the liquor through the skins, partly aided by pressure, the tanning is quickly completed. For finishing, the leather is first dampened in soapsuds, and shaved on the flesh side to equalize the thickness of the leather, and "worked" on a table with rollers, which renders the skin smooth and firm. From this point the methods of "finish" diverge in an endless manner, according as it is desired to finish the leather, as "kid, pebbled, bright or dull." Morocco is the general term used for all goat and sheep skins, no matter how finished.

Sheepskins and Lambskins are tanned by the same general operations as outlined in the case of morocco. Previous to tanning the prepared skins are submitted to an immense pressure to expel the oily matter with which sheepskins are richly impregnated.

Roan Leather is sheepskin tanned in sumac, colored and dressed throughout in the same manner as imitation morocco, excepting that it is finished smooth and glossed.

Skivers are split grain sides of sheepskins tanned in sumach and finished soft—the flesh split being “shamoyed” q. v. and finished white or variously marked and diced patterns, and in imitation grain; principally used for hat trimmings and purposes in which they meet little strain or wear.

Tawed, or Alum Tanned Leather.—Many other substances besides tannic acid may be used to preserve hides and skins and prepare them for certain uses; but these do not make leather which will resist moisture or retain its flexibility after wetting. The most extensively used of these is alum, so that the term alum tanned leather has become a common designation both in Europe and the United States. With this agent is tanned a large proportion of sheepskins and lighter glove leathers from deer, lamb and kid; also kid leather for the manufacture of ladies' and children's shoes.

Kid Leather.—The various steps or operations through which light skins for the manufacture of ladies' and children's shoes pass, in respect to softening, liming, unhairing, bathing in dog's dung and drenching are similar to the processes by which morocco skins are prepared. The tawing itself is accomplished in a hollow cylinder into which is filled with for every 100 goat or kid skins, a mixture consisting of 20 pounds of alum, 9 pounds of salt, 40 pounds of flour, 250 eggs, 1 pint of olive oil, and 15 gallons of water. In this heated mixture the skins are worked about 40 minutes, by which action the tawing is completed. After taken out of this drum the skins are dried rapidly by artificial heat, dampened and shaved down to the required thickness. Next they receive if necessary a second treatment of the tawing mixture. The dyeing or coloring follows, which in case of shoe kid is always black, the color consisting of a compound of bi-chromate of potash, stale urine, logwood and copperas. It is applied either with brushes on a table or by dyeing in vats. The dyed leather is washed with pure water, dried, ironed and polished between glass rollers, and finally oiled on the flesh side with a mixture of oil and wax.

Kid Leather, for gloves, is made from the tender skins of young kids and lambs. The raising of kids for their skins is a leading industry among French mountaineers. Softness, delicacy of texture and freedom from blemish are the principal factors in the value of kid skins, and to secure these great pains are taken. As soon as the young goat begins to eat grass the value of his skin declines, for with a grass diet its skin begins to grow coarser and harder in texture, and its chief merit vanishes. It is therefore kept closely penned, not only to prevent it from

eating grass, but also to secure the skin from accidental injury from scratches and bruises. When the kids have reached a certain age at which the skins are in the best condition for the use of the glover, they are killed and the hides sold to travelling hawkers, through whom they reach the great centers of the tanning industry in France. The superior quality of these French skins, due to climatic causes, is what has given France the supremacy in the manufacture of the finest grades of real kid gloves in the world, a supremacy that will doubtless be long maintained, inasmuch as foreign factories must rest content with second-rate skins, unless they maintain agents on the ground, a policy which a few American manufacturers have found necessary. In all stages of the preparation of this leather the utmost care and attention is requisite. The unhairing is effected by steeping the skins in a mixture of lime and orpiment, and while the general process of fleshing, bathing with dog's dung, washing and treating with bran drench is the same as in the case of other skins, much more attention is bestowed on each stage in order to maintain the smoothness of the grain, and to obtain a clean, elastic pelt, than is absolutely needful for any other variety of leather. The tawing mixture consists for each 100 kid or lamb skins 28 pounds of flour, $3\frac{1}{4}$ pound alum, 1 pound salt, and 230 eggs. These substances are made into the consistency of cream, with water, and placed either in a vat or a revolving drum. When taken out they are dried and damped and stretched and dried again. For dyeing, the skins are first washed out in warm water to free them from superfluous alum and then again "fed" with yolks of eggs and salt. For bright colors, such as soft greys, lavenders, yellows etc., the skins are plunged into small dye vats of the proper dye colors; but for all the darker colors the skins are stretched on a table and the dye stuffs applied with a brush. After completing the dyeing it remains to free the leather from superfluous moisture, dry it, and then stretch and smooth it out, which finishes the preparation of this valuable class of leather.

Shamoy or Oil Leather.—The process of preparing leather by impregnating hides with oil is probably the oldest system of leather manufacture. Well shamoyed leather requires the exercise of much skill and numerous manipulative processes. Hides and skins of all kinds are prepared by shamoying; but sheep, goat, deer, antelope and small calf skins are those usually treated, an enormous number of flesh splits of sheep being shamoyed for common purposes. From the former use of the Chamois skin, of the Alps, is derived the name of the process "Chamois" or "Chamoy." At present none of these skins are obtainable.

Skins for shamoying are in the preliminary stages treated almost as for ordinary tanning; but beyond unhairing, the surface of the grain is shaved off of all except the small thin skins. The skins are next taken

to the fulling machine q. v. where after being rubbed over well with fish oil, they are hammered for about two hours to force the oil into the substance of the skin. They are then stretched, hung up for some time, again oiled and fulled; this operation may be continued from six to twelve times; according to the thickness of the skins being treated. After thorough impregnation the skins are dried, then heaped up in a heated room, where a process of oxidization is quickly set up; so soon as they assume a yellow color and give off a peculiar odor not at all like fish oil, the process is complete and the fermentation is stopped. The skins are smoothed out and the chamois, or chamoy skin is ready for the market! Many druggists sell them and many people buy them under the impression that they are off of the backs of the genuine Chamois animal of the Alp mountains, whereas they are in reality the flesh side of a split sheepskin.

Patent leather was first made in Newark, New Jersey, in 1820, by Seth Bayden. Of late the demand for the finer grades of calf patent leather has largely fallen off and its place is in some measure filled by a cheaper article manufactured of kips or large hides, split and skived down to a proper thickness. It is finished expressly for this purpose, and care is taken to keep it as free as possible from grease. The skins are then tacked on frames and coated with a composition of linseed oil and umber, in the proportion of 18 gallons of the former to 5 ounces of the latter, boiled till nearly solid, and then mixed with spirits of turpentine to the proper consistency. From three to four coats of this are necessary to form a surface to receive the varnish. The coats are laid on with a sort of knife or scraper. To render the goods soft and pliant, each coat must be very light and thoroughly dried between each application. A thin coat is afterwards applied of the same composition, of proper consistency to put on with a brush and with sufficient lamp black boiled into it to make a perfect black. When thoroughly dry it is ready to varnish. The principal varnish is made from linseed oil and Prussian blue, boiled to the thickness of printer's ink. It is reduced with spirits of turpentine to suitable thickness to work with a brush and is then applied in two or three separate coats which are scraped and pumiced until the leather is perfectly filled and smooth. The finishing coat is put on with especial care in a room kept closed with the floor wet to prevent dust.

Grain leather is dressed horse hides, kip calf goat or sheep skins blacked and finished in the grain side, and used for boots, shoes, etc.

Pebble grain goat is grained in an irregular manner, as though numerous small pebbles of different sizes had been pressed upon its surface

Glove calf and glove-sheep are sub names for morrocco, being tanned in the same manner and finished smooth; made of both calf skin and

sheep skin and used for topping of mens shoes and also in the manufacture of ladies' and children's shoes.

Dongola goat is straight grained morrocco, so called from the fact of it having originally been imported from the province of Dongola.

Cordovan leather.—So called from Cordova Spain, where this leather is largely manufactured. It is some times goat skin tanned and dressed, but more frequently split horse-hide. Also called Cordwain

LENO, or leno muslin, is linen muslin, of any thickness or fineness.

LIGHT FABRICS.—A well-known cotton goods manufacturer says that to produce a heavy cotton fabric there are only two ways of doing it—either the use of thick, bulky threads or the use of an increased number of fine ones. “If we use bulky threads our fabric must present an appearance of coarseness, no matter what may be the order of interweaving, and we have no possible means of reducing the coarseness. If we use fine threads it is more than likely that the order of interweaving will prevent the introduction of as many threads as will produce the weight of fabric we desire.”

LINEN.—(*Cloth of Lint*; from Lat. *linum*, flax, linen.) From the earliest periods of human history till almost the close of the 18th century; the linen manufacture was one of the most extensive and widely disseminated domestic industries of European countries. The origin of its manufacture is very ancient. It was old in the time of Herodotus, 500 B. C. The earliest mention of flax by any author occurs in the account of the plague of hail which devastated Lower Egypt, Ex. ix. 31. Linen can be conclusively traced to the early Egyptians, and there is strong evidence that they originated its manufacture, there being ample biblical authority as to the skill acquired in weaving fine linen by the Israelites, which was gained during their captivity in Egypt. Beyond this, recent researches prove that the Egyptians were as well acquainted with the processes to which flax is subjected as ourselves, the mural decorations of their temples displaying with minuteness the implements used in the cultivation of flax, the treatment when ripened, and of the fibres as well of the subsequent process of spinning and weaving. Their mummy wrappings, too, show that with their crude machinery, this ancient people produced linen fabric far exceeding in fineness any cloths which we can produce either by hand labor or the *most modern mechanical inventions*. One piece of linen cloth found on a mummy had 540 warp threads to the inch, and another piece had 365 threads of each warp and weft per inch; the finest ever spun and woven in England being 350 threads per inch. The wonderful durability of linen is evidenced by its existence for so many centuries on mummies and by the remarkable fact mentioned by the German writer and traveler. Seetzen,

that he had found several napkins within the folds of the covering on a mummy which he unwrapped, and that he had them washed several times without injury, and used with great veneration "this venerable linen which had been woven more than 1700 years." From the time of these ancient Egyptians up to the present period, the use of linen for clothing and other purposes has been continuous, and although the vast development of the cotton manufacture checked its consumption for a time, it has about regained its former proportions.

Linen fabrics have several advantages over cotton, resulting principally from the structure and longer lengths of the flax fibre. The cloth is much smoother and more lustrous than cotton cloth; and has a less "woolly" surface, so that it does not soil so easily as the more spongy cotton. Bleached linen starched and dressed, possesses that unequalled purity, gloss and smoothness which make it alone the material for shirt fronts, collars, etc., and the gossamer delicacy yet strength of the thread it may be spun into fits it for the fine lace making to which it is devoted. Flax is a heavier material than cotton, but weight for weight it is much stronger, single threads having proportionate strength in the ratio of 3 to $1\frac{3}{4}$ and cloth 3 to 2.

The manufacture of linen goods in the United States remains among the lost arts, although many efforts have been made to establish the business here for more than half a century. Various causes have been assigned for this failure, but perhaps the main reasons have been overlooked. To make linen goods we must either grow flax or import it. Our government has placed a tariff on dressed flax of \$60.00 per ton so that home mills cannot buy the raw material in foreign countries and manufacture it at a profit to compete with Irish and Russian manufacturers. Since the development of the cotton industry and the abandonment of home weaving, q. v., when every farmer regularly each season raised a crop of flax, the cultivation of this valuable fibre has been greatly neglected. The exact reasons for this are hard to ascertain. Objections have often been raised against our hot summers and cold winters as impediments to the successful growth of flax, and of gathering it at the proper season for the market, but we know that Russia is a great flax growing country, and that in the same latitude heat and cold prevail as intensely as in the United States. It would be singular indeed if within our broad domain, no corner could be found in our virgin soil adapted to the growth of this fibre; but it is a fact beyond doubt that we *do* grow flax, and very good flax, too, in many parts of this country and Canada.

The products of our home flax and linen mills amount to about \$2,000,000 yearly, while our importations amount to about \$30,000,000 per year, on which there is an average tariff of 50 per cent ad valorem.

The bulk of our linens come from Ireland, England and Russia.

The modern manufacture of linen divides itself into two branches, spinning and weaving, to which may be added the bleaching and finishing processes, which, in the case of many linen textures, are laborious undertakings and important branches of the industry. Flax, when received into the mills, has to undergo a train of preparatory operations before it arrives at the stage of being twisted into yarn. The first process consists in *heckling* the flax in order to remove the bark and outside wrapper, and then laying smooth and parallel the separate fibres. This tedious operation was at one time performed by hand, but at present machines are in use. The inferior parts of flax removed by heckling are called "tow." Next come preparing or "roving" and spinning which do not differ greatly from the processes used in the spinning of cotton. Spinners make up their yarn into "bundles" of twenty hanks, each hank containing 10 leas of 300 yards each—3,000 yards. The quality of all linen yarns is estimated by the number of leas (300 yards) in a pound; thus, 50 lea yarn indicates that there are 50 leas of 300 yards each in a pound of the yarn so denominated.

No. 60 yarn— 60 leas 300 yards each. (18000 yards) per pound.

" 100 " —100 " " " (30000 ") "

" 200 " —200 " " " (60000 ") "

" 500 " —500 " " " (150000 ") "

Commercial qualities of yarn range from 8 up to 160 lea yarn. Much finer yarn, up even to 550 may be spun by machines found in many factories, but these fine counts are only used for fine thread and the making of lace. Exceedingly high counts have sometimes been spun by hand, and for the preparation of the finest lace, it is said the Belgian hand spinners must work in damp cellars, where the spinner is guided by the sense of touch alone, the filament being too fine to be seen by the eye. Such lace yarn is said to have been sold for as much as \$1,200 per pound. In the great exhibition in 1851 yarn of 760 lea—equal to 130 *miles per pound* was shown which had been spun by an Irish woman 84 years old. The various operations connected with linen weaving, such as winding, warping, pressing, beaming and drawing do not differ from cotton weaving, the looms being the same. Dressing is a matter of importance in the preparation of linen warps for beaming. It consists in treating the yarn with flour paste, applied to it by cylinders, the lowermost of which revolves in a trough of paste. The paste is equalized on the yarn by brushes and dried by passing over steam-heated cans before it is finally wound on the beam for weaving. This makes the warp stronger and decreases the liability of its breaking when stretched.

Bleaching of linen is generally understood to mean the process of whitening or decolorizing cloth. Until about the year 1890, bleaching

depended upon the natural bleaching agencies present in the atmosphere and the sun's rays. The usual plan was to spread out the cloth on a grassy field called a "bleaching green" and to continue sprinkling it with water several times a day. After being thus exposed for several months to the action of the air, light and moisture, the cloth was rendered white. The process was tedious and occupied much valuable land for the best part of the year, and for this reason large quantities were sent from Ireland, England and France to Holland for that purpose. A particular kind of linen which was regularly sent to Holland to be bleached, received on that account the name of *Hollands*; and another variety of linens, which from its fineness was spread on the smoother grass fields or lawns, received the title of *lawn*. On account of the time consumed by the open-air process of bleaching, many other plans have from time to time been proposed and patented, but hitherto none of them have stood the test of extended practical operation. The English Government once awarded a premium of \$1500 to James Lee for a patent method of bleaching linen, and expended many thousand dollars on his machines and experiments, but in the course of a few years the plan was abandoned as a failure. The bleaching of linen to the present day is conducted much more in the primitive fashion of last century than is the practice with cotton-bleaching. Owing to the stiffness and inelasticity of the flax fibres, a great part of the machinery used for cotton is not available for linen, and solutions of acid and bleaching-powder require to be used in a very dilute condition for linen fabrics.

Ammonia is a good test as to the completeness and success of bleached linen. *Well-bleached* linen is not in the least discolored by it, but linen which is white but not thoroughly freed from pectic matters becomes yellowish in ammonia. Such linen will become yellow if kept in stock for some length of time. The following is a French method of testing linen fabrics to find out if there is a mixture of jute in them: "Put a little solution of chloride of lime into a saucer, and lay in it, for four or five minutes, the thread or cloth to be examined, then squeeze out the solution and put the fabric into a solution of ordinary hydrochlorate acid, and, after a few moments, take out and wash in plenty of water. Then apply a drop of ammonia to the fabric, and, in case there is a mixture of jute, a slightly violet-red color is immediately imparted. Flax and hemp become slightly brown. The red coloration, however, does not remain long, and the proportion of jute mixture can only be roughly shown." To distinguish thin linen cloth from thin cotton cloth, moisten the tip end of a finger and apply it to the cloth. If it be linen the moisture will come through quickly; if cotton, it will come through slowly.

LINOLEUM.—This variety of floor cloth consists of oxidized linseed oil, combined with ground cork, treated and rolled very much in the same manner as Kamptulican q. v., to which in appearance it bears a close resemblance. It was patented in 1863 by F. Walton, who specifies as the most suitable composition for the body of linoleum, 4 per cent of oxidized oil, $1\frac{1}{2}$ per cent of resin, $\frac{1}{2}$ cwt of kaurie-gum and coloring matter, mixed together in a steam heated pan, and afterwards mixed with an equal weight of cork dust, and *spread on and pressed into* a woven cloth of jute or hemp between steam heated rollers. It is stated the weight required for this is 4000 pounds to the square inch. The pattern is painted on the surface by means of blocks. Linoleum has the advantage that it is not cold like tiling or oil cloth; it is made in all widths up to six yards.

LINSEY-WOOLSEY.—A coarse flannel of linen and wool mixed together, was first made at Linsey, Suffolk county, England, in 1450. The linsey-woolsey of the present is a similar material into which cotton enters instead of linen, with a weft of inferior wool. The attempt has been made to reserve the word *linsey* for a mixture of linen and wool, and *woolsey* for a mixture of cotton and wool, but without success.

LISLE THREAD owes its name to the fact that the first manufactured was in the city of Lisle, France. This easily recognized fabric is made from an extra quality of long staple cotton. The yarn is spun exceedingly fine and tightly twisted. Before being knitted or woven, it passes through a process to remove from it every particle of nap or fuzz; the yarn is then given a bath in a chemical preparation which greatly aids in producing that fine, gritty, “linenish” feeling, peculiar only to Lisle thread.

LISSE (lece) is a French term signifying *thread of a web*. The fabric known as Lisse has the same organization as Tarlatan, the difference being that Lisse is woven finer, of either silk or cotton, and is a much more delicate material; used for ladies neckwear and in the manufacture of ruching; when fluked or crimped is called crape Lisse.

LYNX SKINS are of a grey color, more or less approaching to a black according to the climate which the animal inhabits. The darkest shade is on the back, and the hue becomes gradually lighter downwards to the belly, which is white, and marked with black spots, as are the other parts of the skin. The hair is longest on the belly, and is therefore most frequently employed by furriers in the manufacture of muffs. The lynx is common in Sweden, Russia, Poland, and upon the Alps; those which inhabit the latter region are not very dissimilar to the others, but their fur is less soft and beautiful. These animals are likewise to be met with in most parts of North America. Those of Canada and the neigh-

bouring districts are of a very deep grey colour; but such as inhabit the vicinity of Hudson's Bay are almost white, on which account their skins are highly valued.

LYRE, Cloth of.—A 15th century cloth; this is the fullest description that can be given of the stuff, nothing having been found throwing any light upon its character or its title. We may infer that it was of good quality, since two pieces of it are included in a list of articles permitted in 1428 to be exported duty free for the use of the king of Portugal and the countess of Holland. Two years later, under like circumstances, five yards were sent to King James of Scotland.

M

MACKINTOSH.—A waterproof garment, particularly an overcoat or cloak, so named in 1823 from the inventor, Charles Mackintosh. The ordinary Mackintosh cloth is prepared by spreading on the cotton, silk or woolen fabric, layer after layer of india-rubber paste. Double texture goods are made by uniting the rubber surfaces of two pieces of the coated material. The cloth is then cut in the desired shape and the seams united by joining the soft material before it cools. Good qualities of Mackintosh long coats vary in price from \$15 to \$25. [See INDIA-RUBBER and GOLOSHES.]

MACREME is a strong, hard-twisted cotton cord, prepared for the manufacture of macreme lace; also used for other work, such as netting of various kinds, and for hammocks. Macreme trimming is made by knotting the threads together so as to form geometrical patterns, leaving a long fringe of the threads. The word is of Arabic origin.

MADDER.—A plant, the roots of which are ground up and when dissolved in water, used as a red dye. The use of madder has been known from the earliest times, as cloth dyed with it has been found on Egyptian mummies. It was not, however, until the beginning of the present century that the coloring property of madder began to attract especial attention. It had long before been noticed that cattle and hogs which fed on the green parts of the madder plant had a red color communicated to their bones, which was only removed or prevented by keeping them away from this kind of food for a considerable length of time. Also the claws and beaks of birds which fed on madder roots, were affected in the same manner, and the milk of cows that use it is tinged with a reddish color, which is even imparted to the butter; all showing it to be one of the most powerful coloring substances known. [See BANDANNA and TURKEY RED.]

MANILA HEMP is extensively cultivated in the Phillipine Islands, and is used for a great variety of purposes, owing to the many qualities of the hemp. The outside bark is manufactured into cordage, binding twine, matting, ropes, etc., while the inner fibre is spun into fine muslins and other delicate fabrics. Manilla hats are produced from this material. [See HATS.]

MANTEAU was the term used in the 18th century to denote a loose gown worn by ladies, and is probably derived from the French word *manteau*, meaning mantle, or cloak.

MARbled SILK is woven with a variety of colored weft threads, so as to give the appearance of marble to the web, stained or veined irregularly. Marbled Cloth is manufactured in two shades, and is composed of silk and wool, interwoven so that the surface is mottled or "dappled." Marble or Marbleized Plush is so called because by a process of manufacture, the plush has a variable shading in different lights, somewhat resembling the patterns in marble.

MARSEILLES.—So called from the original place of its manufacture, Marseilles, France. A stiff, corded, cotton fabric similar to pique, originally used for men's white vests, ladies dresses, etc. Marsella is the name of the same fabric twilled. Marseilles Quilts may be identified by being woven of very fine yarn and having large embossed figures appearing from a smooth and unbroken surface. These quilts are woven in the Jacquard loom on the double-weaving principle, the embossing being produced by the extra warp threads. [See WEAVING.] The backing weft sometimes floats outside the cloth, sometimes is bound inside just below the plain face, and at other parts the whole of the yarn is firmly united. Where the backing is brought inside, the top cloth is *raised up*, while at those places where the warps are woven together, a *depression* is caused. Large embossed figures may thus be shown on the cloth, although it appears to have an unbroken surface—unlike a brocade or a damask.

MARVELIEUX.—A fine, close-twilled, satin-faced silk fabric, resembling Rhadame dress silk, and with the same glossy finish, but with the sunken lines or twills hardly so perceptible as in Satin Rhadame.

MATELASSE CLOTH—(Mat-les-say) is a heavy cloaking fabric composed of cotton and wool, or silk, cotton and wool mixed, distinguished by the pattern being a large brocade, of an overshot or embossed appearance. In color Mâtelasse is usually black and is used in the manufacture of ladies' cloaks, the New Market style especially. This style of cloak has a full length skirt, hence manufacturers frequently use a cotton warp in order to lighten and cheapen the material. The cotton warp runs through the center and is not exposed, the wool filling

only showing on the face and back, the latter being ordinarily napped, by teasing q. v.

Matelasse is a French term applied to a silk or woolen cloth to denote the peculiar style of its weaving. Such materials have a raised figured or flowered design on the surface, having a quilted or wadded appearance. This is indicated by the adoption of the past participle of the verb *matelasser*, to quilt or wad.

MATTING.—Mattings are made of cocoa, cocoa and cane and all cane. The matting termed Napier is made of hemp. China Matting exported from China and Japan consists of two kinds: "China" matting which is made in 2 an 5 yard pieces, and fastened together in one 40 yard roll; and "Japan" matting, which is made in one 40 yard piece without a joint, and can be reversed. Some of the late Japanese productions have figures inserted into the ground, but these latter are not reversible on account of the pattern.

MELANGE is a French word signifying "mixture;" in the dry goods trade usually applied to dress goods of a black and white color mixture. There is also a variety of black and white dress goods, of French manufacture, woven with a cotton warp and woolen weft, termed Melange.

MELTON received its name from the original manufacturer. It is a stout woolen goods used for men's clothing; in recent years largely used in the manufacture of ready-made overcoats. After weaving, the cloth is fulled to a degree completely concealing the warp and weft; then the surface is sheared and finished without a nap, being neither pressed nor glossed; dyed in solid colors, usually black and shades of brown. [See THIBET CLOTH.]

MERINO.—The second finest breed of sheep in the world, of Spanish origin, so called from their being under the superintendency of the *maerino*, (major) or inspector of the sheep pastures. For centuries the finer wools used for cloth making throughout Europe were obtained from Spain, which was the home of the famous Merino breed, developed from races of sheep introduced by the Romans, the originals of which formed the flocks of the patriarchs thousands of years ago, and have been the parent stock of all fine woolled sheep since. The Spanish Merino sheep were introduced into Saxony in 1765, and by judicious crossing developed the famous Electoral breed, which produces the finest and most expensive wool in the world. Fine Merinos have frequently been brought to the United States and crossed with our native sheep, to the manifest improvement of the fleece in every instance.

Merino dress goods was first made in 1826, at Bradford, England, of pure Merino wool, at which time it was one of the most expensive woolen dress fabrics manufactured. In appearance it is a thin woolen material,

twilled on both sides, back and face alike; superseded in the last few years by Cashmere and Henrietta, which fabrics it resembles.

Merino is also the term applied to a variety of medium weight, white knitted underwear, which was formerly made of pure Merino wool, but now of cotton, or half and half.

The tariff on Merino scoured wool valued above 30 cents per pound, is 36 cents per pound and 61 per cent ad valorem; valued at 30 cents or less per pound, the tariff is 30 cents per pound and 74 per cent ad valorem.

METRE.—One and one-tenth yards.

MILLINER is a corruption of "Milaner," so called from the city of Milan, Italy, which at one time gave the law to Europe in all matters of taste, dress and elegance.

MILLE-RAYE is a variety of percale, so named as being descriptive of the pattern, which consists of minute thread-like stripes, alternately black and white. The width of this light-printed cotton cloth is 32 inches. It is a washing material and is largely used for children's frocks, etc.

MOHAIR, **BRILLIANTINE** and **SICILLIAN** are full sisters in the family of dress goods. These fabrics have an Angora or Alpaca wool filling and a cotton warp. Brilliantine is the finest, woven the closest and presents the brightest and most lustrous surface. Mohair is a grade lower than Brilliantine, while Sicillian is distinguished by being a somewhat heavier and stouter fabric than either of the two sisters. Mohair in all textile goods, is conducive to wiry strength, as well as a desirable beauty. The word is a corruption of the German Mohr—a Moor. It is the hair of the Angora goat, and is supposed to have been first used by the Orientals. It was introduced into Spain by the Moors, and thence brought into Germany. In later years it was extensively produced in Great Britain, and sparingly in the United States, though there seems to be no valid reason why it should not be grown extensively here. [See **ANGORA**.]

MOLESKIN.—Originally a kind of Fustian; a double-twilled and extra strong cotton cloth, cropped before dyeing. At present it is a medium heavy, cwilled totton cloth, napped on the inside and printed on the outside, used for men's pantaloons.

MOMIE CLOTH is found in both wool and cotton fabrics. "Momie" applies to the weave rather than to the material of which the fabric is composed. By a peculiar weaving, in which the warp and weft threads are made to cross each other *irregularly*, a puckered and indented surface is produced, not unlike crape, "Momie" is the French spelling of "mummy." The name was first applied to a French all wool dress

fabric, woven to imitate the cloth found on mummies taken from the Pyramids of Egypt, and was of a rough, irregular weave. This weave is now copied in cheap cotton goods by American manufacturers by using a very fine warp thread and a heavy filling, and unlike in either plain or twill weaving, the threads intersect each other at *irregular* intervals; frequently printed for Draperies, Furniture Covers, Cretonne, as well as being dyed in solid colors. When woven in wool a puckered or fluked appearance is produced, not unlike Crape.

MONTENAC.—(Probably derived from the French *monte*, to cover.) A heavy, napped overcoat cloth of recent origin, distinguished by a portion of the nap being formed in wooly loobs, the other portion straight napped as in Fur Beaver q. v.

MOIRE, (Mo-ry) the French name applied to silks, figured by the peculiar process called "watering," The silks for this purpose must be first wetted, and then folded with particular care, to insure the threads of the fabric lying all in the same direction and not crossing each other except as is the usual way of the web. The folded pieces of wet silk are then submitted to an enormous pressure, generally in a hydraulic machine. By this pressure the air is slowly expelled, and, in escaping, draws the moisture into curious waved lines which leaves the permanent marking called "watersing." The finest kinds of watered silk are known as *Moire Antique*. The same process has been applied to woollen fabrics, called *Moreen*, which is only a corruption of the word *Moire*. This latter process is also called "tabbying." [See **WATERING**.]

MOIRE ANTIQUE is a watered dress silk made in the antique style, so as to resemble the materials woven in the ancient times. [See **MOIRE**.]

MOSQUITO NETTING. A coarse gauze with large open meshes, used for mosquito bars. The most common kind has a single warp confined between two weft strands. Mosquito net is put up in bunches of twelve pieces, the combined length of which should be 100 yards—eight and one-third yards per piece.

MUFFLER is a term applied to the old French *amuser*—to cover—the *mouseau* or *muffle*, a word which has been indiscriminately used for the mouth, nose and even the whole face; hence our word "muzzle." Muffler in early times, was the name of a sort of veil worn by females. The French call their winter gloves *Moufles*, and single pieces of stuffed fur, with which a lady covers her hands is a "muff." Mufflers at present are any sort of neckerchief made from cotton, wool or silk.

MULL. (From Latin *Molio*, to soften.) A peculiarly thin and soft kind of muslin, used for dresses, neckwear, trimming, etc. It is woven of extremely fine cotton yarns, absolutely free from sizing or starch.

MUSLIN.—The name is derived from Mosul, a city in Asiatic Turkey long celebrated for the fineness and delicacy of its cottons. The original home, however, of muslin weaving is in India, where even yet wonderful fabrics of airy lightness continue to be woven, with the aid of only the most rude and primitive looms; these India looms consist merely of two bamboo rollers and a pair of heddles and shuttle which are attached between any two trees affording a comfortable shade. The rigid and clumsy fingers of our American weavers would scarcely be able to make even a piece of rough canvas with the instruments a Hindoo uses in making a piece of the finest cambric muslin. It cannot but seem astonishing that in a department of industry, where the raw material has been so grossly neglected, where the machinery is so rude, that the results should be fabrics of the most exquisite delicacy and beauty, *unrivalled by the products of civilized nations*, even those best skilled in the mechanical arts. This can only be explained by the remarkably fine sense of touch possessed by that effeminate people, by their patience and gentleness, and by the hereditary continuance of muslin-manufacture in families through many generations, which leads to the training of children from their very infancy in the processes of the art. For the lightest fabrics, the young women spin the thread during the early part of the day, when the dew is on the ground; for such is the extreme tenuity of the fibre that it will not bear manipulation after the sun has risen. Some of the allusions to the wonderful fineness of these India muslins appear to border on the marvelous; we read in a missionary's account of a dress length of cotton being enclosed in a nut-shell; and of a father who reproving his daughter for the indecent transparency of her dress, retorted that she was robed in forty yards of the stuff. Another missionary writing from Serampore asserts that "some muslins are made so fine you can hardly feel them with your hand, and when laid on the grass to bleach, and the dew has fallen on it, it is no longer discernible." And the same writer says: "There is made at Seconge a sort of calicut so fine that when a man puts it on, *his skin appears as plainly through it as though he were quite naked*; but the merchants are not allowed to transport it, for the governor is obliged to send it all to the Great Mogul's seraglio and the principal lords of the court, to make the sultaneses and noblemans' wives shifts for the hot weather; and the king and the lords take great pleasure to behold them in these shifts, and to see them dance with nothing else upon them." The name bestowed by the Romans on the fabric—*ventus textilis*, or "woven wind"—is not entirely figurative. It is remarkable that every distinct quality of muslin made in India is the production of a particular district, in which the art of making the fabric has been transmitted for centuries from father to son—a custom which alone must have conduced to the perfection of the manufacture.

Muslin proper may be defined as a thin, plain-woven, uncolored cotton cloth of any width. First made in this country at Pawtucket, Rhode Island, December 21, 1790, by Samuel Slater, the father of American cotton manufacture. The following estimate is the cost of *one pound* of cotton made into brown muslin:

	CENTS
One pound of Middling Cotton delivered at Mill.....	12.50
Waste.....	1.48
Labor.....	3.80
General Expenses.....	2.08
	19.86

Heavy muslins like "Indian Head" or "Wauchusett A," weighing 2.80 yds to the pound, would equal 7.2 cents per yard, first cost.

Muslin the weight of "Pepperell R," weighing 3.70 yds to the pound, would equal $5\frac{1}{3}$ cents per yard. "Hoosier LL" and Lawrence LL," cost $4\frac{1}{8}$ cents per yard. The cost of manufacturidg *any* brown muslin may be ascertained by dividing 19.86 by the number of yards of the muslin to the pound. Bleached cottons usually come one cent higher than brown, and lose a small amount of their weight in bleaching. [See BLEACHING and ADULTERATION OF FABRICS; also APPENDIX for Weights and Picks of cotton goods.]

There are many varieties of muslin, of which, according to a textile authority, the following are among the principal ones:

"Mull Muslin, a dressed and stiffened variety called Swiss Mull; Foundation Muslin, which is very open in texture, and made both in white and black; Buke (commonly called "Book") Muslin, which is sold in a plain, clear, soft and unstiffened state, and is hard and dressed. There are also Figured Muslins wrought in the loom of various widths. Cambric Muslin is an imitation of linen of that make; it is sold colored for linings, glazed, white and black, plain and twilled, figured, striped and corded. Sherhand Muslin is a kind between Nainsook and Mull, and is valued for dresses on account of its retaining its clearness after having been washed. Tamboured Muslins are chiefly made in Scotland. Muslinette is a thick description of muslin. Leno is a clearer, thinner and softer material than Buke Muslin, being slight and gauze-like in quality. There are also Cords and Fancy Checks, having stripes and cords crossing each other, forming squares, thick threads being introduced into the warp and weft. Nainsook is a thick sort of Jaconet, made in plain stripes, the latter running the same way as the warp. Cotine Muslin is a kind of white hair cord muslin, printed in all kinds of patterns and colors. It is of French manufacture and designed for a dress material. The width measures 31 inches. The printing and shading of these goods are considered remarkably good."

N

NAIL.—A unit of cloth measure— $2\frac{1}{4}$ inches or one-sixteenth of a yard. Abbreviated N.

NAINSOOK is from the Hindoo word *Nainsukh*, which originally was used to designate India muslin, or sprigged muslin, *i. e.* marked or adorned with the representation of small branches. Nainsook at present is a fine, soft, bleached cambric, woven in small checks and stripes. French Nainsook, which is imported from France, is the finest, softest and most expensive variety.

NANKEEN was formerly extensively imported from Nanking, China, to Europe, whence its name, the “king,” however; having been changed into “keen.” It was supposed the Chinese held the secret for dyeing its peculiar yellowish buff color, which was found to be remarkably durable. But it became known through some missionaries that this peculiar color was not produced by dyeing at all, the cloth being made of a buff colored variety of cotton, which is still occasionally produced in China and India. The color of our “artificial” Nankeen is produced by an elaborate process, in which the cloth is first dipped into a saturated solution of alum; then in a decoction of oak bark; then in a bath of lime water, and next in a bath of nitro-muriate of tin, which makes a permanent dye. In appearance either plain or twilled, weight of heavy sheeting; used for children’s summer clothes and underwear.

NAP.—From Fr. *Naper*, to nip off the knots on the surface of cloth. The woolly surface of felt, of cloth, of some plants and the like. The surface covering of down or short fibres combed out of the substance of a fabric and lying smoothly in one direction. The loops of the warp in uncut velvet is the nap, but when cut, form the pile. [See PILE and TEASLING.]

NAPKIN is from French *Nappa*, which literally means a little cloth. In the 16th century pocket handkerchiefs were commonly called napkins, and they are still styled pocket napkins by the Scotch. Napkins are woven in long lengths like muslin and sold at wholesale in separate packs of a dozen each, all attached. [See TABLE LINEN, DOILY.]

NAPPING.—[See TEASLING.]

NEEDLES.—How many are there among the hundreds of thousands who buy, see and use that little necessity of the household—the needle—who have any idea of the many and various processes the piece of steel goes through before it is ready for the housewife? There are altogether

twelve different processes through which the needle wire goes before the perfect needle is produced. It is first received on large wooden spools from the wire drawer, and cut into short lengths and placed in large quantities in regular piles; after which a heavy platform is lowered upon them and worked back and forth over the wires, rubbing them out straight. The "pointing" comes next and is accomplished by placing the wires between a revolving pulley and belt; as the pulley revolves the wires are also rapidly turned, and coming in contact with a fine grindstone, the points are quickly ground down. After this comes the polishing and then the stamping machine, which flattens the steel around the eyes, so that it is very thin. Then the "eyes" are punched through, and they are taken between the thumb and finger by the workman and passed over a small grindstone which removes the surplus steel from the outside edges of the eyes. The tempering of the steel is the next process; large shovels being used on which the needles are laid and held in the furnace until the proper temper is obtained. From here they are taken and thrown into buckets of oil which hardens and at the same time makes them elastic. Then follows brightening the needles, large quantities being placed in chamois skins, filled with oil and powdered emery. They are rolled up and securely tied, and a platform lowered upon the bundles moving them back and forth, rubbing the needles together and by means of the oil and emery brightening them. To free them from oil they are placed in large pans of sawdust, and shaken till thoroughly dried. A little polishing over a buff wheel then finishes the needle with the exception of the inside of the eye. To do this a large number are threaded upon a small wire which is extremely hard and rough. The needles are revolved at a very high rate of speed, thoroughly brightening the inside of the eye and removing the roughness, which prevents the cutting of the thread. Many cheap needles are not put through this process. Girls stick them into small pieces of cloth. Ten papers are tied up into a bunch, twenty-five needles to the paper, making a quarter of a thousand. They are sold to the retail stores at so much per thousand and needles.

Originally needles were made of three distinct shapes. The first short and rather stubby, with the point ground down rather rounding, and were called "ground-downs." The next a little narrower and sharper at the point, were termed "betweens." "Sharps" were the slimmest and most narrow-pointed. One-sixth of our needles are made in Brooklyn, N. Y.; the balance are imported from Redditch, England. On all imported needles, there is a tariff of 25 per cent.

NETTING, or NET MAKING. —This art is so ancient that no date can be fixed for its invention. That it was practiced for fishing and bird catching by the earliest inhabitants of the earth is without doubt,

and there is still to be seen in the Museum at Berlin, Germany, some Egyptian nets, and the implements by which they were made, that are 3,000 years old. [See BOBBINET.]

NEW MARKET is a style of ladies' winter cloak imported from England a few years ago, superseding the Dolman in 1883-4. It was formerly the name of a close fitting overcoat used by men for riding and driving, which received its name from New Market, England, a town famous the world over for its horses and horse-racing. The ladies' style of New Market has not departed far from the original, it still being a tight fitting garment made of heavy goods, the skirt reaching quite to the ground.

NOIL.—The short lengths and knots of wool taken from the long staple in the process of combing. These Noils are either used to make felt, or are put into cloth to increase its thickness. It is the function of the combing machine now in use to separate the "top" or long fibre from the "Noil" or short and broken wool. [See WOOL and WORSTED.]

NUN'S VEILING is a wide, untwilled "woolen" q. v. fabric, very soft, fine and thin; a sort of fine, double fold bunting, formerly used by nuns for veils, but now used exclusively for ladies' summer dresses, dyed black, white and colors.

NUTRIA FUR.—The Nutria is an animal of the genus rodent, somewhat resembling both the musquash and the beaver. It is smaller than the latter, but larger than the former, and inhabits the banks of rivers in Buenos Ayres and Chili, being a kind of water rat. Nutria skins are dressed and dyed as a substitute for sealskin, and are also used in the manufacture of hats as a substitute for beaver.

O

OIL CLOTH.—Floor.—The body of Oil Cloth is what is called burlaps q. v., and is made of jute q. v., imported from Scotland. This coarse cloth is woven soft and limp, and is stiffened or "sized" by being passed through a mixture of starch and glue and over hot rollers, coming out, it might be said laundried. It is then ready for the paint machine where it is given the body. This paint is composed of raw oil, turpentine, ochre and umber. There are four qualities of Oil Cloth, depending on the number of body coats of paint; that which is to be the best quality receives six coats; the poorer grades a less number. The cloth is in pieces 25 yards long by from 1 yard to 2½ yards wide. The thickness of each coat of paint is governed by a steel knife, in

manipulating which a workman becomes so proficient that he can tell nearly to the pound what a piece of Oil Cloth will weigh when the coating process is completed. Three men at a paint machine can turn out in a day 100 pieces containing 50 square yards each—5,000 square yards. The operation of coating the best quality of Oil Cloth occupies a week, as each coat requires 24 hours to dry. It is then sent to the rubbing machine, where surfaces coated with glue and sand passes rapidly over the side which is to be printed, ridding it of all irregularities. The better qualities are afterward given an extra coat of paint, when they are ready for the printers. This is the most interesting part of the operation. For every color in the pattern there must be a wooden block. These blocks come from Main, and are about two inches thick and two feet square, and composed of several pieces of wood. The top layer is of maple, crossed and recrossed by narrow grooves which form a surface of small squares, 144 of them to the square inch. These little squares look like, and are in reality, so many pegs. Where the pattern is desired to show the pegs are left standing; those on the parts of the surface not to be printed being cut away. The styles in patterns change twice a year. Some are designed in Utica, and others come from Philadelphia and New York. Some patterns containing many colors require from twenty-five to thirty blocks, and consequently that number of impressions, to reproduce the design. The paint used is similar to ordinary house paint. Oil Cloth is open to the objection that it has a hard, cold and uncomfortable surface, while it is almost as noisy to the tread as ordinary wood flooring. Many substances have been proposed to supplant it, in which these objectionable features have been overcome. Of these bodies linoleum q. v. and kamptulicon q. v. have proved the most successful.

OIL RED.—[See TURKEY RED.]

ORGANDY is French for “book muslin.” It is a species of White Goods of great fineness and transparency, woven plain, barred figured and striped.

ORGANZINE.—A name applied to silk which after having been first wound off from the cocoons into hanks, is then placed on a winding machine, which reels off the hanks on to wooden reels. These are then placed on spindles, and the fibres of each are made to pass through a minute hole and small hollow brush, which together clean the thread and remove any knots or projections from it, throwing it at the same time into hanks again. Then the threads of *two* hanks are taken and again reeled off, this time on to *one* hank, being twisted together to the *left*; then two of these are taken, their ends laid together, and twisted to the *right*. These operations, consisting of winding, cleaning, twisting and doubling, constitute Organzine silk. It is extensively used in

the manufacture of poplins, velvet, plush, etc., and is the strongest and best silk yarn used in any kind of weaving.

OSNABURG.—So called from the fact that the first heavy cotton cloth manufactured in England was woven in the district of Osnaburg. It is the name applied in the United States to a coarse cotton fabric made in the South, both in plain unbleached and fancy stripes and plaids, used largely by the negroes for dresses and shirts.

OTTOMAN dress silk is distinguished by having a heavy cord, extending from selvage to selvage of the web. Ottoman cords in silk and woolen dress goods are similar in appearance to fine Marseilles or Pique in cotton, and are sometimes termed Bedford Cords.

P

PALETOT.—A ladies loose outer garment or wrap. The word is directly derived from the French, but is further traceable to *palla*, a long upper garment and *to-que*, a cap. Our present paletot is a loose, lightweight wrap with sleeves, cape and hanging hood.

PANTALOONS.—This term is derived from *Pantalone*, a ridiculous character in Italian Comedy, and a buffoon in pantomime, who first wore "breeches" and "stockings" that were all of one piece. [See Hose.] This character took his name from Pantaleon, the patron saint of Venice, and hence is a personal name very frequent among the Italians, and sometimes applied to each other as a nickname. Pantaloon comes into general popularity with the French revolution, when puffed breeches and tights, laces and gewgaws subsided and gave way to the comparatively simple dress which characterized that period, although pantaloons at this time only came to the middle of the calf of the leg, where they were met by half top-boots, they soon afterward extended in length to rest upon the foot.

PARAMATTA CLOTH.—This is a kind of bombazine, the weft of which is of worsted, and the warp of cotton. It is employed as a dress material for the purpose of mourning. When it was first introduced it was composed of a silk warp and worsted weft. This cloth had its origin in Bradford, England, but the name it bears was derived from a town in New South Wales, on account, in all probability, of the wool of which it was composed being imported thence.

PASSAMENTERIE.—*Passement* is French for lace, and *passementerie* is French for lace-work. The trimmings known by this name is a kind of gimp work, covered with beads and silk. From 1880 to 1885 it was much used for trimming ladies cloaks and wraps, as well as dresses.

PEARL DRESS BUTTONS.—In pearl dress buttons, 16 line is the smallest size, while 8, 10, 12, 14 and 16 lines (pearl only) count for ladies' gloves and men's dress shirts. The general run in sizes of pearl buttons is from 16 to 30 for dresses. Sizes 30 to 60 are for ladies' cloaks and saques.

PEAU DE SOIE.—*Soie* is French for silk, and *peau* is also a French word signifying hide or leather. The silk received this name on account of its fine even grain, or leather-like surface. Like ordinary gros-grain *Peau de Soie* is woven with a rib or grain, but so fine and close as to produce a surface very similar to a plain woven fabric. [See SILK.] The best grades of *Peau de Soie* are finished on both sides exactly alike, but cheaper qualities are single faced.

PEKIN is a French term employed to denote a silk stuff, made in alternate stripes of satin and velvet, which vary in width in the different pieces manufactured. *Pekin* silk goods may be had in black and all colors, and are much used as portions of dresses and trimmings. There are also *Pekin* gauzes, the gauze being substituted for the satin stripe.

PELISSE.—(From French, *pelisse*, a skin of fur.) Originally a long garment made of fur; hence, a garment lined or trimmed with fur. At present, a lady's cloak of silk or other material with sleeves, and with or without fur, shorter and looser than the Newmarket q. v.

PENANG is similar to percale, being better and heavier. It owes its name to the Island of Penang, whence it was formerly exported in large quantities from England.

PERCALE is a French word signifying cambric muslin. *Percale*, proper, is a fine medium weight muslin, slightly sized, printed with small figures and stripes and one yard wide; it was introduced in this country about twenty-five years ago.

PICOT (pe-ko) is a French word indicating a little knob or splinter; when used to designate ribbons it has the same meaning as applied to "purl" in lace-making; small attached loops or circles. A small loop forming part of an ornamental edging, consisting of a thread upon which other thread has been wound, or to which small stitches or knots have been added.

PILE is from Latin *pilus*, hair. In dry goods parlance it indicates the fine, hairy substance on the surface of cloth; particularly applied to velvet, plush, fustian and carpeting. [See NAP.]

PILOT CLOTH received its name in the palmy days of Mississippi river steamboating. It was customary for the pilots of the boats, as well as other officers, to be uniformed, and the cloth adopted was a medium-heavy, smooth, blue fabric similar to Kersey or the old Beaver minus the nap on the wrong side. At present it is mainly carried by tailors for making overcoats, and is usually indigo blue in color, somewhat heavier than ordinary Kersey, with a shorter and closer nap.

PILLOW.—The "pillow" is a round or oval board stuffed so as to form a cushion and is placed upon the knees of the workman. On this pillow a stiff piece of parchment is fixed with small holes pricked through to mark the pattern. Through these holes pins are stuck into the cushion. The threads with which the lace is formed are wound upon "bobbins," small round pieces of wood, about the size of a pencil, having round their upper ends a deep groove, so formed as to reduce the bobbin to a thin neck, on which the thread is wound, a separate bobbin being used for each thread. By the twisting and crossing of these threads the ground of the lace is formed. The pattern or figure, technically called "gimp," is made by interweaving a thread much thicker than that forming the groundwork, according to the design penciled out on the parchment. Such has been the pillow, and the method of using it, with but slight variation, since its first introduction.

PINS.—There is no article used in dress which is of greater antiquity than the little pin. It has been in use since man and woman first felt the desire to shield their bodies from the gaze of the curious. First as the natural thorn it came into being, and the thorn seems to have given the pin its shape, when later they were made of iron, bronze and brass. The first pins manufactured in this country was in Carolina in 1775. The beautiful automatic machinery by which pins are made today and the no less intricate machines by which they are stuck into papers are wonderful when compared with former methods of manufacture. In a pin making machine as now used wire of suitable size running off of a reel, is drawn in and straightened by passing between studs set in a table. When a pin length has entered it is caught by lateral jaws, beyond which enough of the end projects to form a pin head. Against this head a steel punch advances and flattens the wire by a die arrangement into the form of a head. The pin length is immediately cut off and dropped into a slit just large enough to pass through, but retain the head. The pins are consequently suspended by the head while their points are held against a revolving file-cut steel roller—along the face of which they are carried by gravitation till they fall out at the end, well pointed pins. The pins are next purified by boiling in weak beer. They are then placed in pans and covered with water over which a quantity of bitartrate of potash is sprinkled and after boiling several

hours both the brass and iron pins are coated with a thin deposit of tin, which gives them their silvery appearance. They are then washed in clean water and dried by revolving in a barrel mixed with dry bran or fine sawdust, from which last operation they are "winnowed" finished pins.

In the 14th century the English passed a law allowing the pin maker to sell them in open shop only on the 1st and 2nd of each January. It was then that the court ladies and city dames of low and high degree flocked to the shops to buy them, having first been provided with money by their husbands, called "pin money." When pins became cheap and common, the ladies spent their allowances on other fancies, but the term "pin money" still remained in vogue.

English pins were originally termed "corkings" or "corking pins," and were made in three different sizes, viz: *Large corkings, middle corkings and short corkings*. At present the brass pins which are put up "full count," that is, 400 pins per paper, are termed *Ne Plus Ultra* (the utmost point, completeness, perfection) and the sizes are denoted by the letters "M. C." large (middle corkings); "S. C." medium (short corkings); "F. ½" small, and "BB" very small. Brass pins are also put up in papers of 275 pins, and sold at a much less price, but these are not branded *ne plus ultra*. Adamantine pins are usually put up 250 to 275 pins per paper, and are numbered from 2 large to 5 small.

PIQUE.—A cheap ribbed or corded white cotton fabric resembling Marseilles, but of inferior quality. Sometimes printed in small patterns.

PLUSH.—This word is derived from Fr. *peluch*, and that from Latin *pilus*, hair, from the fact that when plush was first manufactured it was made with a worsted foundation and a pile of goats' hair or mohair. The use of this fabric dates back to the 16th century, but cannot be traced to any earlier period. Plush may be described roughly as long, napped velvet, and any kind of material may be used in its manufacture—cotton, silk, wool, or any kind of hair—the distinction from velvet being found in the *longer and less dense pile* of plush. The process employed in weaving it will be found under the heads of WEAVING and VELVET. The silk plush now so extensively used for dress and millinery purposes is made on a cotton foundation, the ground-warp frequently being dyed the same color of the silk pile-warp. Silk plush, having a longer and less dense pile than silk velvet, the pile admits of being brushed from side to side much easier, thus reflecting the rays of light to a much better advantage, and producing a watered or marbled appearance. One form of plush is that which has taken the place of the napped beaver-felt in the dress hats of gentlemen, which are now consequently known as "silk" hats. [See HATS.] All-silk plushes are not made in this country, but cotton back and mohair plushes are produced in fairly good

qualities, and in some instances equal the goods of Europe. Crimped goods for furniture use are manufactured in large quantities in Connecticut. One plush power loom will average 10 to 12 yards per week, while the hand looms used extensively in Philadelphia and altogether in England, make much less. The railroads of this country consume about 20,000 yards of plain plush for car seats per year, and up to the present time this has been largely supplied by home mills. The present high tariff just laid on these goods it is claimed was passed with the intention of developing this industry in the U. S. The duty on Mohair and Wool Plush is 48 cents per pound and 60 per cent. ad valorem; on Plushes, Velvets and other pile fabrics containing less than 75 per cent. in weight of silk, exclusive of selvages, the tariff is \$1.50 per pound weight and 15 per cent. ad valorem. Velvetens, corduroys, and other pile fabrics composed of cotton, not bleached, 10 cents per square yard and 20 per cent. ad valorem.

POLO CAPS are distinguished by having neither peak nor roll, usually made of silk, low, square-crowned and soft. Men's traveling caps are made polo style.

POMPADOUR is a pattern for silk fabrics, in which some small design of leaves and flowers, with the colors pink and blue, intermingled, and frequently brightened with gold, is used. There are many modifications of this style. Pompadour Parasol is a form of parasol used by women about 1860, having a folding handle and generally covered with Moire Antique or other heavy silk.

PONCEAU.—From Latin *puniceus*, red, poppy-corn color—a flame color. In dyeing, the name for various coal-tar colors of different shades of red.

PONCHO.—(ponc-ko) A kind of covering worn by the Spanish Americans, having the form of a blanket, with a slit in the middle for the head to pass through. Also a name given to a rubber blanket used by soldiers and campers, to either throw over them at night, or to cover their laps while riding or driving; made with a slit in the center through which the lines may be passed.

PONGEE SILK is properly a thin, soft, all silk fabric woven from the natural uncolored raw silk, without further manipulation after it leaves the cocoon than to "boil it out of the gum." Formerly our entire supply of this silk was imported from China and Japan, where it was woven on the primitive hand looms. At present it is largely produced in the United States. There is another fabric called Pongee, which consists of a silk warp and a wool filling, often found in shades of silver grey and brown, and of a soft and glossy appearance.

Pongee is said to be a corruption of Chinese *pun ki*, 'own loom,' or

of *pun chih*, 'own weaving,' (as if home made) but all silks woven in China are stamped with one or the other of these phrases, along with the name of the house selling them. According to another authority the word Pongee is a corruption of *pon chi*, 'native silk.' Native Pongee silk resembles the Tusar silk of India q. v., woven principally in the province of Shantung q. v., from the cocoons of a wild silk worm which feeds on the leaves of the scrub oak. The finest kinds, bleached, dyed or figured, after importation are known in the trade as China silks q. v.

POPLIN.—In the 15th century a fabric was woven at Avignon, France, (which at that time was a papal diocese) and called "papaline," in compliment to the reigning Pope; this fabric was made of silk and was much esteemed, vast quantities being manufactured to supply the gorgeous church vestments and hangings then in use. An imitation of this material was introduced into England and the name corrupted to "Poplin," which has been adopted in this country. In 1775 the manufacture was introduced into Ireland, by French Protestant refugees, and from that time to the present, Irish Poplins have been famous. The best modern Poplins consist of a warp of silk and a filling of fine wool, gives substance combined with great softness and elasticity to the material. Cotton and linen are substituted, wholly or partially, in making cheap goods, but they are very inferior in beauty to the true Poplins. Poplins, which once were harsh and consequently interfered with the draping of a dress, are now woven with such perfection that they equal the finest and softest pure silk fabrics.

PORTIERE is the French word for "door curtain;" usually a heavy curtain or drapery, made of chenille or the like, attached to a pole placed horizontally over a doorway or arch, and used instead of a swinging door.

PURL, in lace making, is to finish or adorn the edge with small circles or loops, consisting of merely a single thread, produced either by machine or hand-work. The word is derived from French *purfle*, to adorn or embellish.

PURPLE.—The high estimation in which purple has been held, dates back to a very remote period. The word is exceedingly common in the Scriptures, appearing there to sometimes signify a material of the name, and again as cloth of which the texture was lost sight of in the value of the color. Tradition ascribes the discovery of the purple dye to a dog, which biting the *Perpura* mollusk, from which the dye is derived, had its mouth stained with the color. The discovery is said to have been made, and the manufacture carried on, at Tyre, the ancient city of Phœnicia, or Canaan, lying between northern Palestine and Syria on the Mediterranean.

It is certain that the best purple dye was obtained from these mollusks, but it is almost equally as certain that the name of Tyrian Purple was given to more fabrics than could possibly have made or dyed at Tyre, or even dyed elsewhere from the purple secretions of the *Purpura* shell fish. In the time of Augustus the price of dyeing a pound of wool with genuine Tyrian purple was \$160; and in Nero's reign to wear this costly color without his authority was punished with death; a restrictive law which probably indicates that the particular sort of it known as Tyrian purple, may from its very great cost, have been confined to the exclusive use of the wealthy. So much confusion exists in the statements concerning these "fine" and "ordinary" purples that not a few have considered the whole matter of the *Purpura* shell-fish dye a sort of myth; not that there is no truth in the shell-fish producing a dye—that cannot be gainsaid—but that the many wonderful stories told about it in ancient times were used as a blind to cover and conceal the knowledge of cochineal and a tin mordant, which it is maintained the Tyrians possessed. When we consider the simple mode of fishing practiced at that time, and the small intensity of the color, which required three pounds of the liquor to one pound of wool, we should say they could not have had a large trade; since according to modern researches into this dye, one single *Purpura* mollusk produces only about *one drop* of the liquor, then it would take 10,000 fish to dye one pound of wool. By whatever means the dye was produced, the purple of ancient times was the most beautiful, brilliant and dazzling of all colors in the world, and for ages has been the symbol of imperial power and majesty.

Q

QUILTS.—The Honeycomb Quilt, as its name implies, is a cloth with the figures on its surface formed by raised ridges, both warp and weft way. This is generally woven with bleached knitting-cotton, two or three double. Grecian Quilts are also woven of bleached knitting-cotton, and yet the coarse threads give a smooth, glossy surface in consequence of the weave being on the damask principle—that is, the figure may be formed in a weft-satin; while the ground is a warp-satin weave. The Alhambra Quilts are woven of various designs, but with different colored yarns.

R

RADZIMIR is synonymous with the French *Ras de St. Maur*, cloth of St. Maur. This is a rich description of dress silk in which a Marseilles or cut cashmere effect is produced, by dropping a thread of weft at regular intervals, generally about a sixteenth to a quarter of an inch apart. This produces a sunken line from side to side of the web, alike both on back and face. Between the sunken lines it is woven fine and close like a *Peau de Soie*, q. v.

REED.—That part of a loom by which the threads are separated in weaving; also a family of tall grasses with jointed stalks; also a flexible metal stay used by ladies for distending their dress skirts behind; these come put up in sets of three, different sizes.

REEL.—To reel silk or thread is to wind it round an appropriate frame, so as to make a skein of it. Wool, cotton and spun silk are each first carded and spun, and then reeled, but “reel” silk is reeled directly from the cocoon.

REMNANT.—A contraction of *remanent*, from Latin *remanes*; that which is left behind or remains.

REP.—(Corrupted from *rib*.) A particular style of weaving, in which the surface presents a transverse-ribbed appearance, distinguished by being closely corded in diagonal lines. **Furniture Rep** is a flowered cotton goods woven in this manner. The word is also applied to a thin, worsted goods.

REPELLENTS are solid colored, plain woven, six-quarter wide cloths used for making a cheap grade of ladies' and children's wraps, and commonly known as waterproof; ordinarily of cotton warp and wool filling, though sometimes made of pure wool. Originally they were woven so close and thick as to repel rain or moisture, hence the name, “Repellent,” or “Waterproof.”

RETAIL is from French *retailer*, “to cut again”—from *re*, again, and *tailler*, to cut; hence, also, our word, tailor.

RIBBONS have continued almost uniformly in favor from the 14th century until now, Fashion, even indulging in but few fluctuations in all this time. It is mentioned that ribbons were first woven on the *bands* or borders of garments and were narrow, like a *rib*, hence the origin of the word *ribband*, which was the old English and the present French term for our **RIBBON**. It will doubtless be a surprise to many to learn

of the profusion in which they were worn in 1650—1700 by the men of Europe. Every portion of their attire was trimmed with them. Evelyn, describing the dress of a fop of his time, says: "It was a fine silken thing which I espied walking th' other day through Westminster Hall, that had as much ribbon about him as would have plundered six shops and set up twenty country pedlers. All his body was drest like a May pole. A frigate, newly rigg'd, kept not half such a clatter in a storm as this puppet's streamers did when the wind was in his shrouds; the motion was wonderful to behold, and the well-chosen colours were red, orange and blue, of well-grain'd satin, which argued a happy fancy."

The terms *blue ribbon* and *red ribbon*, bestowed by Fairs and other competitive exhibitions as marks of excellence, originated in England, on account of a badge of blue ribbon being used to designate the Order of the Garter, which is the highest order of English Knighthood, [See GARTER], and the red ribbon badge designating the Order of Bath, the next highest in rank.

The different widths or "numbers" of ribbons were formerly denoted by the thickness of so many penny pieces. The old English penny was about the size of our silver dollar, and a ribbon the width of one of these pennies set up edgewise was called No. 1; a ribbon the width of two pennies set up edgewise was No. 2; a ribbon as wide as seven of them was No. 7, and so on; thus the custom of numbering origieated and is still retained. Ribbons all measure ten yards to the bolt and never exceed nine inches in width.

The city of St. Etienne in France is the principal seat of ribbon manufacture in the world, though many are made at Basel, in Switzerland; Crefeld, Germany, and Coventry, England. France and Switzerland make the best ribbons on account of using only hand looms, which preserve a perfect evenness of tension and disposition of the threads; the product of power looms is disposed to "cockle" or crimp in places. All of our ribbons are imported, and the tariff is 50 per cent. ad valorem.

Cotton Velvet Ribbons are cut in strips from fine velvets, and the edges having no selvage, are sized to prevent ravelling. They are made in lengths of twelve yards, the numbers running 1 to 40. They are also produced in a variety of colors, besides black, and the widths run from 1, 1½ and 2 inches up to 10 inches, then in even numbers up to 20 inches, and then to 24, 30 and 40 inches. The lengths of twelve oards nominally, run short in cotton ribbon velvets, as also in the inferior kinds of silk velvet ribbons.

RUCHING.—A kind of ruffled or goffered quilling, chiefly used for ladies' neckwear, made of blonde net, ribbon, lace or other material.

S

SACKCLOTH.—A penitential fabric, The ancients, in case of heavy affliction, laid aside the garments best suited to their case and put on Sackcloth which was made of coarse, short hairs of animals, twisted together and used for both warp and weft; this coarse, prickly material being made into garments which fit close like a sack, was worn to inflict personal discomfort in cases of grief or penance.

SATIN.—When Satin first appeared in trade, it was called round the shores of the Mediterranean, "Aceytuni". The term slipped through early Italian lips into "Zetani"; coming westward, this name in its turn dropped its 'i' and smoothed itself into "Satin". It was first imported into England from China in the 14th century, since which time Satin has been a constant and important article of commerce. In the weaving of other silken fabrics, the warp and filling intersect each other every alternate time, as in the case of any regular plain weaving, but in Satin it is the fine silk warp *only* which shows on the smooth, lustrous surface of the fabric. The filling is completely hidden on the surface. Instead of the warp passing under the filling every other time, it passes over 8 (10, 12 or 20, according as may be desired) filling threads, then *under one* and over 8 more, and so on, producing an even, close and smooth surface, which is capable of reflecting the rays of light very entire, the fabric thus acquiring that lustre and brilliancy which particularly distinguish it. The filling (or back) in ordinary qualities is cotton or linen, while the finest grades, such Satin de Lyon, are all silk. When first taken out of the loom Satins are somewhat flossy, and they are "dressed" by being rolled on heated metal cylinders, which operation imparts to them a more brilliant lustre.

SATIN CLOTH or SATIN DE LAINE.—This a French woollen material of satin make, having a smooth face. It is employed for women's dresses, is produced in most colors, and is of stout quality and durable. In width it measures from 27 to 30 inches, and is otherwise known by its French name, *Satin de Laine*.

SATIN DE LYONS is a fine quality of lustrous satin, produced at Lyons, France, having a silk back. There is also another popular variety of silk under this same name which has less lustre than the ordinary fine all-silk satins, and is of a thinner quality. The back is twilled, and it is much used for linings.

SATIN DU CHESS is the name applied to the heaviest grade of pure silk dress fabric. It is woven with a grain so fine that it does not produce a "grain" effect, but is rather on the order of a plain weave, the surface being apparently composed of minute elevations and depressions or "nicked", similar to a peau-de-soie.

SATEEN is printed and woven by the same processes as calico, except that Sateen is woven twilled on three, four or five harness, which enables the manufacturer to make a sort of satin face. Satin is usually woven on sixteen harness, that is each warp thread passes *over* fifteen filling threads and then *under* one, over fifteen more and under one, and so on. French Sateen is "quarter satin"—the warp threads passing over four wefts, and under one and so on.

SATINET.—This name signifies a clothing material similar to casinet. It is made with a cotton warp and a filling of short, inferior or shoddy wool, which is mixed with enough long wool to enable it to be spun; and is woven in a way as to bring the filling to the face of the cloth. On leaving the loom it is fulled, sheared down smooth and the pattern printed on much after the same manner that figures are printed on calico. In the old style of weaving the cotton warp threads show on the back, while in the later methods the warp runs through the centre, the wool filling being the same on both sides. Large quantities of satinet are produced in New England, there being in all 60 mills, representing 186 sets of machinery. A single set running on standard goods turns out 300 yards per day, making the total product of the 186 sets 55,800 yards per day or 1,674,000 yards per month. The average value of these varieties at the mills is about 25 cents though a good quality is sold from 35 to 42 cents; single width. Satinet is but from 10 to 15 cents cheaper than Union Cassimere, which is much to be preferred, on account of the pattern being woven into the body of the goods, instead of simply being stamped on, as in Case of Satinets.

SATIN REGENCE is a very rich and expensive description of dress silk, woven with a satin surface broken by fine sunken lines, extending across the web from selvage to selvage. This peculiar weave throws the back of the fabric into an Ottoman q. v. pattern, by which it may always be distinguished. It is among the costliest of modern silk dress fabrics, the importers' price frequently being from two to three dollars per yard.

SATIN RHADAME has a satin face crossed and broken by fine twilled lines, extending diagonally across the web. It is a lustrous silk fabric largely used for fine silk dresses, made both all silk and cotton backed.

SATIN ROYAL is the name applied to a very fine and expensive variety of silk dress fabric. It has a glossy satin finish on both sides, each face being crossed by fine twills, or sunken lines, after the manner of Satin Rhadame. It is always made of pure silk, and, unlike Rhadame, *both sides* are finished exactly alike.

SATIN SURAH is a medium heavy satin faced material, the surface of which is crossed and broken by a round cord or twill, extending diagonally across the web.

SCRIM.—(From French *escrim*, a shield or protection.) A soft and loose woven cotton fabric, printed with large variegated patterns, used for window curtains or window drapery, and sometimes as a cheap substitute for white lace curtains.

SEALSKIN CLOTH.—The material used for this kind of cloth is the finest kind of mohair, and the shade given by dyeing is exactly similar to the seal fur. It is manufactured at Yorkshire, England, and is used for ladies' outdoor jackets. This cloth must not be confounded with "silk sealskin," which is composed of wild Tussar silk, and also made in imitation of sealskin fur, used for ladies' caps, cloaks, mantles, trimming, etc.

SEBASTOPOL.—[See CUT CASHMERE.]

SERGE.—(From Lat. *sericus*, silken.) In England in the 12th century, Serges of silk were manufactured and used for men's clothing. The twill of this Silk Serge was of flat appearance and woven curiously fine. This was soon imitated in wool, and for six hundred years was known as Wool Serge, being used almost exclusively for men's clothing. In weight and texture it belongs to the flannel family; woven in a fine twill with a "worsted" warp and a "woolen" filling, which accounts for the springy, elastic nature of true Serge. It is recognized by its smooth and comparatively hard and wiry surface.

Fabrics under the *general* title of Serge may be had in either silk or wool. At present some of those made of the latter material are smooth on both sides of the cloth; others are only smooth on one side and wooly on the other, while varieties are manufactured rough and wooly on both sides. French Flannel Serge or Serge de Berri is composed of long wool, and has somewhat the appearance of India Cashmere. It is a French-made woolen stuff, so called from being produced in the province de Berri. Serge Cloth is smooth on one side and rough on the other. Witney Serges are wooly and heavy throughout. Silk Serge is employed in making the most costly mantles, and by tailors for the lining of coats. Pompadour Flannel Serges are so designated on account of the small flower design with which they are decorated. The coarse and heavy kinds, employed for upholstery, are of double width, whether of wool or silk: the width of ordinary Dress Serges run from about 30 to 36 inches.

SEWING SILK comes put up 50 and 100 yards to the spool; black in sizes 000, 00, 0, A, B, C, D and E, from fine to coarse in the order named; colors are made in size A only, that being the medium and most used number.

SHAKER FLANNEL.—Shaker is the name of a religious sect which emigrated to this country in 1774. and colonized in different parts of the East. These people live together in communities and possess large tracts of land, flour and woolen mills, etc., which they own in common. They have extensive gardens connected with their settlements, cultivate flowers and medicinal herbs, and practice farming and free-love along with other manufacturing industries. The flannels which they at one time made of mixed wool and cotton, took their name. The Shaker flannel of the present is a soft finished, slightly-napped material, cotton warp and woolen weft, in color plain white or plain red. There are also many all wool and all cotton flannels *called* Shaker, on account of their soft finish and nappy surface.

SHANTUNG PONGEE SILK.—This is a soft, undyed and undressed Chinese washing silk, and much resembles Hindoo goods of the same character, but somewhat duller in color. The various qualities are uniformly 19 inches in width, and differ respectively in price, for the piece of twenty yards. Shantung is the province in which the silk is manufactured. [See PONGEE and INDIA SILKS.]

SHEEP-GUT is known in commerce as cat-gut, and is made of the twisted intestines of sheep. Whip cord, hatters' cord, bow string, cloakmakers' cord, violin, guitar and harp strings are made of sheep-gut and variously prepared.

SHEER.—In nautical parlance it means a longitudinal curve or bend of a ship's sides. It is also applied to fabrics that are very fine and thin, which are called sheer, being very soft and pliable.

SHEETINGS AND SHIRTINGS.—Common bleached and unbleached sheeting and shirting range in width from 24 to 108 inches; in weight, from 1½ square yards to the pound to 9 square yards to the pound; in threads to the inch, from 64 to 88, each way. A power loom weaves 5 yards per hour, and one young woman can tend 12 looms. [See MUSLIN and COTTON.]

SHETLAND SHAWLS.—The genuine Shetland shawls are made on the Shetland Islands, off the coast of Scotland. It is said that no knitting in the world exceeds in beauty the texture of these shawls. The wool from which they are made is obtained from a native breed of sheep, which resemble the famous Cashmere goats of Thibet. The wool for the finest shawls is pulled from the neck of the living animal, and is spun and prepared by the natives, and knitted into shawls two

yards square, which are so light and fine that they can "be easily passed through a wedding ring." Imitations of these are knitted in this country by machinery, of ordinary wool, in various sizes and colors, and sold under the same name.

SHIRT.—To the Arabs we are indebted for that almost indispensable article of apparel, the shirt; the Arabic name for which is *camis*, whence the Italian *camisca* and the French *chemise*. It was called by our Saxon ancestors indiscriminately shirts or camise, and the undermost garments of both sexes were then of similar shape and materials. The word shirt is derived from the Saxon word *sceort*, short; and that from Latin *curtus*, having a similar meaning; hence curtail, etc., so that shirt is literally, a short garment.

Some years ago a damask manufacturer in Scotland made a shirt entirely in the loom, without any kind of needlework, and sent it to the Hunterian Museum in Glasgow. "The neck, wristbands and shoulder-straps were of double cloth, neatly stitched; the buttonholes properly worked with appropriate stitch, the buttons sewed on, the gussets inserted, and a ruffle added. On the breast the Glasgow arms were woven, and the motto, 'Let Glasgow Flourish.'"

SHODDY or MUNGO.—These were formerly terms of opprobrium in connection with woolen manufactures, but are now recognized as a material of great utility for many purposes where "body" and warmth are more essential than toughness or elasticity. Shoddy consists of rags and shreds of stockings, flannels and other soft woolen fabrics, clippings of fulled goods and tailors' waste, etc., etc., torn and reduced to fragments of the original fibre. These rags are first oiled and then passed through a machine significantly called the "devil," which literally rends the rags into minute particles that look more like dust than fibres; this is done by the rapid rotation of a large cylinder, armed with powerful iron spikes, with equally strong toothed rollers revolving in an opposite direction. Shoddy cannot be used without a due proportion of natural-length wool, usually one-fourth of pure wool being employed in spinning shoddy yarn. It finds its way into a very large proportion of woolen goods, such as linings, rugs, wraps and heavy overcoating, druggets, blankets and satinetts. Shoddy is practically a new source of textile material, developed and brought into existence by restrictions placed on the importation of pure raw wool. If it were not for our high tariff on wool shipped into this country, it is stated, our manufacturers could purchase Australian or South American pure wool and make a strictly all wool fabric for the same price they can produce a "shoddy" article—thus giving the consumer from three to five times as good wearing material at the same cost. It is simply a question of protecting the fat and sleek sheep raisers of the U. S. at the expense of the wearers of the cheaper grades of woolen goods—the very people who can least afford to bear the burden.

SHOE THREAD is a strong, unbleached linen thread-yarn, made for the special use of shoemakers. The thread receives no twisting by machinery; the shoemakers doing this for themselves, waxing previously. Is put up in boxes of eight balls to the pound and sells at wholesale at \$1.00 per box.

SHOT SILK is a term used to describe silks in which the warp and weft are of different colors, produced by a "changeable" or "shotted" effect.

SICILLIAN.—[See MOHAIR.]

SILESIA was, when first made, a thin linen, or sleasy kind of holland q. v. thus called because made in Silesia, a country of Germany. Silesia is now made of fine cotton, double-fold, and on account of its sleasy and polished surface is always rolled in the form of a round bolt, in order to facilitate the handling. Woven twilled, and dyed in all conceivable colors, also printed with stripes and figures.

SILK.—

THE WORD SILK IN DIFFERENT LANGUAGES.

WORD	LANGUAGE	WORD	LANGUAGE
Sir,	Corea.	Silke,	Icelandic.
Se,	Chinese.	Siole,	Anglo Saxon.
Sirkek,	Mongol.	Silke,	Danish.
Sirghe.	Mandchou.	Silk,	English.
Cheram,	Armenian.	Sirig,	Welsh.
Seric,	Arabic and Syraic.	Seda,	Latin, Middle Ages.
Sericum,	Latin.	Seta,	Italian.
Chelk,	Slavonian.	Seide,	German.
Silke.	Gothic.	Satin,	French or English.

Placed in the salubrious and mild air of Paradise, our first parents could hardly want any other covering than what decency required. Accordingly we find that the only article of dress was a belt of fig leaves; the same tree that afforded them food and shelter furnished them also with covering for their bodies. But when in consequence of their transgressions they were ejected from their blissful abode and forced to forever dwell in less favorable regions, a more substantial covering was necessary, and the ever merciful Creator made them coats of skins.

To indicate the extent to which their descendants have improved upon the original sheep-skin as a material and style of wearing apparel, is one of the prime objects of this compilation.

The immediate offspring of our first parents having subdued the sheep and learned how to make use of its wool; and another branch of the primordial family, known as the Egyptians, having first discovered and cultivated flax, which they used as a textile material on account of the

blossom resembling the ethereal blue which surrounds the world, it remained for the post-diluvian descendants of Noah—the Chinese people, to discover and develop the cultivation of the silk worm.

The utility and excellence of the material derived from the silk worm, according to Chinese records, was discovered by their empress See-ling-shee, who with her own royal hands first unravelled the cocoons and wove the glossy filaments into a web of glorious sheen. The Chinese guarded the secret of their valuable art with vigilant jealousy, and many centuries passed before the culture spread beyond the country of its origin. The importation of raw silk was first brought from China through India and Persia to the small but commercial island of Cos, lying off the coast of Asia Minor, where first was woven those gauzy tissues which became so fashionable with the people of that early period. These were stigmatized by the moralists as anything but seemly for women's wear. Seneca condemns them: "I behold," he says, "silken garments, if garments they can be called, which are a protection neither for the body nor for shame." We have an echo to the remarks of Seneca in the words of Solinus: "This is silk, in which at first women but now even men have been led by their craving after luxury, the *show* rather than to *clothe* their bodies.

Towards the beginning of the Christian era raw silk began to form an important and costly item among the prized products of the East which came to Rome. Fine silk was at this time worth its weight in gold. Notwithstanding its price and the restraints otherwise put on the use of silk, the trade grew. A monopoly of it was reserved by the government under Justinian, who endeavored to divert the trade from the Persian route along which silk was then brought into the east of Europe. In this he failed, but subsequently hired two monks who had long resided in China to return thither and learn the whole art and mystery of silk-worm rearing, and to make an attempt to bring back to Europe the materials necessary for the cultivation of silk. This they effected by concealing the eggs of the silk worm in a hollow cane. From the precious contents of that bamboo tube brought from China in the year of 550, were produced all the races and varieties which has stocked the Western world, and which has given trade, prosperity and untold wealth to great communities for more than thirteen hundred years.

About 1838 a speculative mania for the cultivation of silk developed itself with remarkable severity in the United States. It was caused principally through the representations of Samuel Whitmarsh as to the capabilities of the South Sea Islands mulberry for feeding silk worms; and so intense was the excitement that fruit trees and crops of all kinds were displaced to make room for the wonderful mulberry bushes. In Pennsylvania as much as \$300,000 changed hands for the plants in one

week, and frequently the young trees were sold three or four times over within a few days at ever-advancing prices. Plants a single year's growth reached the ridiculous price of \$1.00 each, at the height of the fever, which, however, did not last long, for in 1839 the speculation collapsed; the famous mulberry was found to be no golden tree and the costly plantations were uprooted.

The most singular feature in connection with the history of silk is the *persistent* efforts which have been made by monarchs and governments to stimulate silk culture in their respective countries, efforts which continue to this day in the United States, England, India and other British colonies. These efforts to stimulate by bounties and other artificial means have in no instance resulted in permanent success. In truth raw silk can only be profitably brought to the market in countries where there is very cheap labor and an abundance of it. This is made plain by the fact that China, Japan and Italy are and always have been, the principal silk producing countries of the world.

When the larvæ of the silk worm is fully mature, and ready to change into the pupa condition, it proceeds to spin its cocoon, in which operation it ejects from two little glands simultaneously a line or thread about 4000 yards in length, moving its head round in regular order continuously for three days. The thread so ejected forms the raw silk of commerce, which as wound in the cocoon consists of two filaments—one from each gland—laid side by side and agglutinated into one fibre by their own adhesive constituents. The leaves of the white mulberry tree furnish the best food for silk worms. Trees which are three years old give about seven pounds of leaves apiece. An ounce (when born) of silk worms will consume during their life about 1,500 pounds of leaves. The consumption at the beginning is very small, but becomes quite large toward the end of his existence. To produce sufficient silk to make a dress pattern requires more time and capital than most people imagine. If we take one and a half pounds as the weight of pure silk required, this would be equal to two pounds of raw silk, because in extracting the gum from raw silk it loses 25 per cent. of its weight. To *produce* two pounds of raw silk require the entire silk obtained from 7000 to 8000 worms allowing a percentage for death by disease and other casualties. It may be interesting to state that these 7000 or 8000 worms when newly hatched would scarcely weigh one-quarter of an ounce, yet in the course of their life, which only lasts from thirty to thirty-five days, they will consume about 400 pounds of leaves and increase in weight nine thousand times. Consumers of silk will not wonder at its high value when they consider that to raise two pounds of raw silk so much time and money is required. Besides the original cost of the eggs or young worms, they require feeding several times daily with leaves. This is a

large item of expense if the cultivator does not grow and gather his own leaves, but is compelled to purchase them. Then follows the various processes of gathering the cocoons and reeling off the silk, throwing, scouring, dyeing and weaving.

Here we must distinguish between the "reel" silk and the "spun" silk manufactures. The former embraces the operations peculiar to silk, dealing as they do with continuous fibres of great length; whereas in the spun silk industry the raw material is treated by methods similar to those of cotton and wool. It is only injured and unreelable cocoons, the husks of reeled cocoons and other waste from reeling which are treated by the spun silk processes, and the silk thereby produced loses much of its beauty, strength and brilliance, which are characteristic of reeled silk.

REELING.—The object of reeling is to bring together the filaments from two or more (generally four or five, but sometimes up to twenty) cocoons, and to form them into one continuous, uniform and regular strand, which constitutes the "raw silk" of commerce. The reel to which the silk in the cocoons is led consists of a light six-armed frame, enclosed within a wooden casing having a glass front, the enclosure being heated with steam pipes. The cocoons are then placed in warm water and the ends attached, when the reeling, or unrolling begins. To keep the strands from directly overlaying each other, and so adhering, the last "guide" through which the silk passes has a reciprocating motion, whereby the fibre is distributed within certain limits over the reel.

THROWING.—Raw silk being still too fine and delicate for ordinary use, undergoes a series of operations called throwing, the object of which is to twist and double it into more substantial yarn. According to the quality of raw silk used and the throwing operations undergone the principal classes of thrown silk are (1) "singles," which consist of a single strand of hard twisted raw silk, made up of the filaments of eight or ten cocoons; (2) "tram" or weft thread consisting of two or three strands of raw silk *not* twisted before doubling and only lightly spun, (this is soft, flossy and comparatively weak); (3) "organzine," the thread used for warps, made from two twisted strands spun in the contrary direction to that in which they are separately twisted.

SCOURING.—Up to this time the silk fibre continues to be lustreless stiff and harsh, from the coating of gum on its surface. The removal of this gum is performed by the operation of boiling-off or scouring. To boil off, say 300 pounds of thrown silk, about sixty pounds of white soap is shred and dissolved in 200 gallons of pure water, at a heat of 195 degrees, and in it the hanks of silk are immersed, being continually turned round so as to expose all portions equally to the solvent influence of the hot solution. For some purposes—making gauze, crape, etc.—

the silk is not scoured, and for dyeing silks certain colors, half-scouring is practiced. The perfect scouring of French silks removes twenty-five per cent. of their weight, and China silks lose thirty per cent. Silks to be finished white, are bleached by exposure in a closed room to the fumes of burning sulphur, and are afterward washed in pure cold water to remove all traces of sulphur.

SPUN SILK MANUFACTURES.—The materials of the spun silk trade are (1) the floss, or loose outer fibres which surround ordinary cocoons; (2) remains of cocoons after the reelable silk has been removed; (3) waste from "throwing" processes and from all the stages through which the reeled silk passes in manufacturing; (4) torn or cut cocoons, and those that are pierced by the worm; (5) various wild silks which are either unreelable, or more profitably worked by carding. The waste-spinner's first duty is to bring this mass of diverse material into a fibrous or tow-like condition for spinning. This is effected by carding, after the same manner that wool is carded, and the spinning is done precisely as in the case of flax yarn. For twisting the thread into yarn of two, three or more strands, they are wound on the doubling frame and finally twisted as in dealing with raw silk. The finished yarn is very lumpy and requires very severe improving and singeing. Spun silk lacks the smoothness, brilliance and *strength* of raw silk yarn, but still it is an extremely valuable and useful material, and its comparative cheapness gives it an important place among the products of textile industry. It is used very largely in "mixed" fabrics, as well as for the cheaper ribbons, velvets, hat-plush, also in the hosiery and glove trade and for knitting and embroidery threads.

Into the dyeing of silk it is not here necessary to enter, except in so far as concerns the nefarious practice carried on in dye houses which has had a very detrimental influence on the silk trade. Silk, we have seen, loses about one-fourth of its weight in scouring. To make up for this loss, it has long been the practice to dye dark colored silks "in the gum," the dye combining in these cases with the gum or gelatinous coating, and such silks are known as "souples." Both in the gum and in the scoured state, silk has the peculiar property of absorbing heavy dye matters, the remaining to all appearance undiminished in strength and lustre, but much added to in weight and thickness. Silk in the gum, it is found, absorbs these heavy dyes more freely than the scoured; so to use it for weighting there are these great inducements—a saving of the costly and tedious scouring; a saving of the twenty-five per cent weight which would have been lost; and a surface on which much greater deception can be practiced. In dyeing a silk black, a certain amount of weight must be added; and the common practice in former times was to make up on the silk the twenty-five per cent. that was lost in scouring. Up to 1857 the utmost the dyer could add was "weight

for weight," but an accidental discovery that year put dyers in the way of using tin salts in "weighting," with the result that they can now add *forty ounces per pound* to scoured silk; and 120 ounces to souples and 150 ounces per pound to spun silks; yet they call these compounds "silk." The use of different chemicals enables dyers to weight all colors the same as black. The apparent lustre of the fabrics is preserved, because the silk fibre absorbs the heavy chemicals to a degree truly wonderful, and there is a semblance of silk with a good "body," that attracts purchasers. Very brief wear reveals the deception. The cohesiveness, the elasticity and the real strength of the fibre are greatly reduced. As a further evidence the goods have become highly combustible, but when burned with a match fail to give the usual odor of animal matter by which burnt silk is so readily recognized. Another test is to pull out a thread and see if it is strong, and when it breaks it should fly into many little ends. If it stands this test, then rub one corner of the piece of silk in the hands as though washing it. After this operation, if it be good silk, it will on being brushed out *look as smooth as ever*. If on holding it up to the light and looking through it you see no traces of the rubbing, be sure the silk is good. The warp and weft should not differ much in size, and evenness should characterize the rib or it will not wear well. If silk be crushed together in the hand and suddenly released, it should spring out quickly, leaving but little crease. This spring is called the *verve*, of which poor silk stuffs have little or none; and those adulterated with jute are also deficient in this characteristic. Pure silk does not stiffen when wetted and dried, and if black the dye should have a slight tinge of green when the light is seen through it. Stiff silks do not wear well, as they cannot be pure; the softer the texture, the purer the silk. [See GROSGRAIN, TAFFETA, SATIN, EPINGLE, CHINE, FAILLE, OTTOMAN, ARMURE, PEAU DE SOIE, SATIN DU CHESSE, GROS DES INDUS, SATIN DE LYON, RHADAME, RADIZMER, CRAPE, &c.]

SILK STOCKINGS were first made in England in 1575, knitted by Queen Elizabeth's silk woman, Mistress Montague, who presented Her Majesty with a pair of silk ones, which she liked so well that she kept the donor knitting silk stockings as long as she lived. Before the end of her reign "stockings were made of silk, yarnsey, worsted, crewel or the finest yarn that could be had. The fashion thus introduced by royalty was soon adopted by the under ranks.

SINGEING.—The operation of singeing when applied to cotton and woollen cloths is to effect the removal of surface-hairs or fibrous down on the surface of the cloth, raised up during the process of weaving. All kinds of cloths which are to have a "finished" surface must be subjected to this operation. This surface-down is got rid of by either of two methods. The apparatus generally used for *hot-plate singeing* con-

sists of a furnace surmounted by a metal plate, which is sometimes ridged on the surface. The cloth is first brought in contact with the brushes which raise the loose nap on the cloth, then passes over the white-hot metal plate or bar, and is again wound on to a roller. *Gas singeing* is accomplished by drawing the cloth through brushes and over a horizontal pipe perforated with rows of small holes, so that the gas issuing therefrom burns as a narrow sheet of flame. Cotton goods are afterward bleached and calendered; woolen goods pressed, ironed and folded.

SKEIN is a quantity of yarn after it is taken off the reel. The skein contains 80 threads of 54 inches, and 7 skeins make a hank, 18 hanks a spindle.

SMYRNA RUGS.—[See CARPETS.]

SOCK is derived from the Latin *soccus*, a kind of low-heeled light shoe or buskin. The Socks of the early Anglo-Saxons were worn over the stocking, and within the shoe, differing in nothing but material from those worn at the present time. [See HOSIERY.]

STUFF is an English word applied to any woven textile, whether cotton, hair, silk, linen or wool, but more especially denoting those fabrics made of "worsted" or long, combing wool, such as merinos, camlets, shalloons, tammies. Stuffs are distinguished from other woolen cloths by the absence of any nap or pile, and having little or no tendency to shrink when damp, nor to felt in the process of weaving. Stuffs, all those that are woven either plain or twilled, with spots and designs of various kinds, but in all the thread is laid bare, the superfluous fibres of wool being singed off by means of a red-hot iron. After the process of weaving and singeing, they are tightly rolled, soaked in hot water and boiled, then scoured, stacked or milled, and the moisture pressed out between rollers.

SURAH SILK, which is woven with a twill similar to serge in woolen goods, is a fine, soft, twilled silk stuff, employed for dresses. It is distinguished from a foulard by its greater softness and flexibility which preserves it from creasing, and it has no dressing like the former. It is to be had in black, grey and white; and in various light colors of a delicate tint, and measures 26 inches in width. It bears a Hindoo name and is probably of Hindoo origin.

SWISS is a variety of cotton cambric, manufactured at Zurich and St. Gall, in Switzerland, for a long period before being made elsewhere in Europe or the United States. It is a thin, sheer fabric woven rather open and slightly calendered, striped or dotted in the loom. It is only to be had in white and is chiefly employed for quillings, flounces of petticoats and dress, and also for infants' wear.

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TABBYING is another name for "watering" fabrics, and has the same meaning as "moire," except that it is usually applied to woolen materials instead of silk.

TABINET.—A rich damasked cloth chiefly used for window curtains. It consists of a warp of silk and a weft of woolen yarn—of the same kind and quality as that used in making poplins. It is made in various soft-toned colors and has the appearance of fine damask, usually enriched with diaper patterns.

TABLE LINEN.—Table cloths, table napkins, tray napkins, damask slips, damask doyles, tea cloths, etc., are all included in the general term of "table linen."

Table cloths may be had of various dimensions, and in either single or double damask. They may be had from 2 yards square, or 2 yards by $2\frac{1}{2}$ yards, or else of $2\frac{1}{2}$ yards by 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$, 5, $5\frac{1}{2}$ up to 8 yards in length, so as to dine from six to twenty persons; also, in due proportions, up to 10 yards in length.

Damask slips to spread over the end of a table, to match any of the table cloths named may be had of 22 inches in width, up to 27 inches.

Tea-cloths, with doyles to match them, are made in white damask with colored borders, and checked in crossbars of ingrain colors; also in drab and coffee color.

Dinner napkins are to be had in single and double damask of three-quarters of a yard square, also of three-quarters of a yard by seven-eighths, also of seven-eighths by 1 yard.

Damask doyles are manufacture in round, oval, or square form.

Tray cloths are $1\frac{1}{2}$ yards square, and 1 yard by $1\frac{1}{4}$ yards.

Women servants' and kitchen table cloths may be had both in diaper and damask, of either $1\frac{3}{4}$ yards in width or of 2 yards.

Men servants' waiting thumb napkins may be had 18 inches square; party napkins 22 inches square; fish napkins, 22 inches square, and breakfast napkins of damask, double damask, and with a small spot pattern of several dimensions.

All these are produced in the best Irish linen manufactures, and the sizes are generally about the same as those produced in England. There are also bleached Burnsley and Scotch diaper cloths. [See DAMASK.]

TARIFF.—The word "tariff" is derived from Tarifa, a town on the coast of southern Spain. This town received its name from Tarifa Malek, a Saracen chief, who landed at that point on the coast in 710, and during the Moorish domination all vessels passing through the straits of Gibraltar were here compelled to pay duties or tribute to the savage chief; whence the word "tariff." As used at present the word indicates a list of goods, with the duties or customs to be paid for the same, either on importation or exportation. In the United States there can be no duties imposed on exports. Our tariff duties must be all laid on imports.

A Protective Tariff is a law imposing duties on imports with the purpose of discouraging the use of products of foreign manufacture or origin, and of stimulating the home production of the same articles.

It has been argued, with much plausibility, in the early stages and conditions of an industry, that it is politic to protect them against the unequal competition in their own markets with the more advanced arts and appliances of foreign countries, until they have by this means acquired ability to stand upon their own merits; and this being once admitted, the transition is easy to the general doctrine that, since we find that there are always commodities which other nations can produce much better and cheaper than we can produce ourselves, that it is wise and expedient to place a high tariff upon nearly all foreign goods, either raw or manufactured, in order to protect our various native industries—wool, cotton and silk manufactures, sheep raisers, wine makers, sugar producers, timber owners, etc., etc. The true interests of the entire nation are thus lost sight of by the law-makers representing special localities, because protective duties carry the consequence that several parts of a nation have to pay one locality more of their own means for what they need, than they should have to pay the foreigner, and under a system of this kind the sources of public revenue, so far from being increased, are certain of being impaired. On the other hand there are imports so entirely of foreign origin, and so free from competition with native industry, that a large duty may be raised upon them in the custom house, without disturbing the freedom and equity of international trade. The question of tariffs thus appears to be capable of reasonable solution as long as it is kept within the circle of what is permanently expedient to the public revenue. When it passes beyond these bounds it launches into a sea of complicated errors. The *self-interest* that has force and influence sufficient to discourage the imports of foreign commodities by protective duties, passes naturally onward to selfish ends, and thus tariff legislation and revisions degenerate into a "grab" and "dicker" for special interests.

The present average tariff on woolen goods is 62 per cent; the average

on linen, jute and hemp manufactures is 28 per cent; on silk, 50 per cent; on cotton, 40 per cent. The import duties collected from these four manufactures comprise over 60 per cent of the entire tariff receipts of the government.

T-CLOTH.—T-cloth is a plain cotton fabric manufactured in England for the Chinese and East India markets. It weighs about four ounces to the square yard, and is put up in bales of fifty pieces of twenty yards each. The letter T is stamped on each piece, hence the name. *not. No letter T. Distinguished by colored head end. Originally called Taw-cloth or T-cloth becoming exchange for*

TAFFETA is derived from Persian *taftah*, to spin. A term of somewhat general application in the silk trade. It was formerly applied to all plain silks simply woven by regular alternations of the warp and weft, and is supposed to be the first kind of silk weaving known, even to the Chinese. For several hundred years Taffeta was a sort of generic term for all *plain silks*, regardless of weight or color, but in more recent times has come to signify any light, thin, plain-woven silk fabric with a considerable lustre or gloss, such as Summer Silk, etc.

Octavio May, of Lyons, is held to be the first manufacturer of glossy **taffeties**; and tradition tells us the occasion of it. Octavio, it seems, was going backward in the world, and being unable to retrieve himself by the manufacture of Taffeties, such as were then made, was one day musing on his misfortunes, and in musing chanced to chew a few threads of silk which he had in his mouth. His reverie being over, the silk he spit out seemed to shine and on that account engaged his attention. He was soon led to reflect on the reason; after a good deal of thought he concluded that the lustre of that silk must come, 1st, From having pressed it between his teeth; 2d, From his having wet it with saliva, which had something glutinous in it; and 3d, From its having been heated by the natural warmth of his mouth. All this he executed upon the next Taffeta he made, and immediately began to acquire immense riches to himself, and to the city of Lyons the reputation it still maintains of giving the gloss to silks and plushes better than any other city in the world.

TAMBOUR WORK, which is a sort of embroidery, is of eastern origin, and was worked in China, Persia, India and Turkey long before it became known in Europe, and up to the present date it is still largely employed in the east, and the work there executed is much appreciated from the beautiful colors employed, and the labor expended on it. Until the middle of the last century, Tambour Work, except in Turkey and the Levant, was not known in Europe, but at that time it was introduced into Saxony and Switzerland, where it was worked only upon white muslin and cambric with white thread, and used to ornament dresses, curtains, caps, borders and all varieties of white trimmings.

TAMISE CLOTH.—A fine, plain-woven, woolen dress fabric, the warp and filling of which are of exactly the same size, woven in equal proportions; it is of a close and firmer weave than nun's veiling, and much finer and more delicate than bunting. **Taffeta tamise** is the term applied to a Tamise cloth with a fine cross-ribbed surface.

TAPESTRY.—To the retail salesman who throughout his business experience has been accustomed to the monotony of selling paper curtains, linen hollands, or occasionally a few yards of Nottingham lace for window decoration, it will be interesting to learn something of an historical fabric which reached the height of the weaver's art about the year 1500. For richness of color, elaborate finish of detail and those æsthetic requirements of window and wall decoration, the Tapestry of this period rivaled the pictures of such celebrated painters as Raphael and Michael Angelo. Upon these Tapestries were represented as clearly as in any painting, scenes from the bible and mythology, romances and historical subjects, decorative work in which trees and foliage formed the main design, and the battles and victories of kings and princes. Though rich and varied in effect, the tapestry of this period was made with not more than twenty different tints of wool—half tints and shades being got by "hatching" one color into another. The making of genuine Tapestry differs from ordinary fabric in that no visible weft is thrown completely across the loom, but the pattern is formed by stitches being knotted across the warp with a wooden needle called a "broach". It is a sort of a link between regular woven work and embroidery, from which it differs in having its stitches applied not to the finished web, but to the stretched warpthreads only, the filling stitches being put in loosely and carefully pressed home, so that the warp strings are almost completely hidden.

Gobelin Tapestry received its name from a family of dyers who settled in Paris in 1476. The head of the family was Giles Gobelin. It was he who discovered a peculiar kind of scarlet dye, and he expended so much money on his dyeing establishment that it was named by the common people, *la folle Gobelin*. To the dye works there was added in the 16th century a manufactory of tapestry. So rapidly did the wealth of the family (descended from the original founder of the factory—Giles Gobelin) increase, that some of them forsook the trade and purchased titles of nobility. The name of the Gobelins as dyers cannot be found later than the end of the 17th century; in 1662 the entire works were purchased by Louis XV in behalf of the French government, by which it has been managed from that day to this. The government employed the best artists to make cartoons and paintings, and these pictures were reproduced almost exactly by the tapestry weavers at the Gobelin factory. These were often of great size and elaboration including a large

series of sacred, mythological and historical subjects, landscapes, sea-pieces and even portraits. In this laborious and artistic work it is estimated that not less than 14,000 differently tinted silks and wools were in use. The production of the Gobelin governmental factories were chiefly for royal use and presentation, and even at this day few specimens are found outside the palaces of kings and princes. A single specimen owned by a New York house, measuring about 54x27 inches, is valued at \$800. Real Gobelin tapestry is consequently hard to find in dry goods markets though much is sold as Gobelin which is not genuine. The name, Giles Gobelin, who was the original discoverer of the new process for dyeing a beautiful and peculiar scarlet, was the means of adding a new word to our vocabulary. Everybody at that time looked on him as a crank for spending so much money on his factory and it was called "Gobelin's folly," but he made a go of it and his success was so great that those superstitious old folks supposed that he was aided by the devil. The devil was supposed to have taught him the art of dyeing the beautiful scarlet on condition that at a certain time the devil was to *have* him.

When the time was up, the devil came after him and "caught him going through a yard at night with a little piece of lighted candle in his hand. Gobelin begged for time but the devil wouldn't let him have it. At last Gobelin requested his Satanic Majesty to wait until the bit of candle in his hand burned out, and the devil consented. The wily old Gobelin, as soon as he got this concession, threw the candle into a well and pitched the devil in after it. The devil was very angry, but before he could get out, Gobelin gathered a guard of enthusiasts about him and secured himself from further attacks.

Now for the word. From this story came the word "goblin," a ghost or specter, and it has become one of the words of the English language, but it had its origin in the silly story that was told about the man who first made these tapestries.

TARLATAN is a thin, gauze-like fabric made of cotton, used formerly for ball dresses, but at present for children's wear, fancy work, etc. It is of an open texture like plain-woven Swiss, but is more heavily "sized." Tarlatan is piece dyed in tints of blue, pink, green, etc. and is put up in 12 yard lengths.

TARTANS.—[See CLAN TARTANS.]

TEASLING or NAPPING.—The operation of raising a nap on the surface of woven cloth probably but few fully understand. This part of the process of finishing cloth is called Teasling. When woollen cloth is removed from the fulling machine wet and heavy the fabric is allowed to partly dry, when it is in proper condition to produce a good nap. This nap-raising is effected by the use of the heads of a thistle-like

plant called the teasle. These oblong heads are about 3 inches long by 2 inches in diameter; clothed with strong, sharp recurved hooks. They are an important article of commerce, being grown principally in Holland and France. These heads are fixed in a round frame on the circumference of a long cylinder, which is made to revolve against the surface of the cloth, just close enough so that the sharp hooked teasles may scratch the surface and become slightly entangled with the minute surface-fibres of the cloth, and so break or pull out their ends as to raise on the whole surface a fine, but unequal, nap. A self-acting arrangement within the cylinder regulates the lightness or closeness of contact of cloth and teasles. Much inventive talent has been expended to provide metal substitutes for the vegetable teasles, but all have been discarded; for the natural teasle, unlike any metal "teeth," while sufficiently strong to scratch up the entire surface of the cloth, disengaging and opening up short fibres and thus covering the whole with a nap, will at the same time *break* in contact with a knot or other obstacle, without injuring the cloth, while the metal teeth are too liable to tear and break the threads. There are, however, several varieties of nap desired in finishing woollen cloths, and a nap *may* be raised in a certain class of fabrics for a purpose quite opposite of that for which other naps are formed. For instance, in finishing some goods, the object is to produce a smooth and thick nap which will quite conceal the underlying warp and filling; while other goods are but slightly teasled with a view of ultimately removing all nap from the surface, leaving the *pattern* of the cloth well defined and free from all hairiness. After the nap has been raised the cloth is next cropped or sheared, in order to produce a uniform, smooth and level nap, *or* a well cleaned surface. This operation is now performed with great rapidity and certainty by a machine which in principle, is the same as a common lawn mower. It consists of a cylinder armed with a set of curved knives or cutters, revolving with great velocity against the stretched surface of the cloth, cutting away and breaking off the projecting fibres which come within range of its blades. Cloths upon which a nap of sufficient thickness has been raised may be finished with any fancy ridged, tufted, or waved-line surface desired, as in case of heavy overcoating and ladies' cloaking, by simply having the blades of the shearing machine so notched as to cut it out; or it may be pressed into various patterns by being "stamped" with hot iron rollers.

TERRY CLOTH.—This is a cotton fabric with a looped pile surface used as a cloaking for children and in the manufacture of Turkish towels. The first terry cloth was made of silk in France some fifty years ago. In 1845 John Bright, the great statesman of England, began to make worsted terry cloth at his mills at Rochdale. The fabric proved

to be a great success, and many a manufacturer tried to solve the problem of producing the article in cotton. All of them failed, however, until Samuel Holt succeeded in making the first cotton terry cloth in 1848. He patented the process both in England and the United States. In 1864 Holt left London and came to Patterson, New Jersey, where he formed a company and erected a plant for the manufacture of terry cloth. Two years afterward the company disposed of Holt's patents for \$250,000, which caused a lawsuit, in which Holt lost a large amount of money. Terry cloth is woven with two beams, one for the loop pile and the other for the foundation warp, which is always kept tight. After two wefts have been inserted and tightly beaten up, the reed is allowed to fly loose by a peculiar arrangement, and both warps being kept tight, two wefts are put in without being beaten up. Then the reed is fastened, and the loop warp made quite slack, and on the *next* weft being beaten up, the two previous are also driven home, and with them the loop warp which stood between the fell, q. v., and the two neglected wefts, thus forming loops on both sides of the cloth. This weave is not confined to the making of fabrics with an unbroken pile surface, but is adopted in stripes for bath towels and wraps, in checks and even figures for quilts, combined with color in other effects, and also woven alternately in some special cloths with entirely different patterns. **Terry Velvet** is made entirely of silk, having fine ribs or cords on the best side. Inferior kinds are made with a cotton back. It is chiefly used for trimmings, particularly for children's garments. Although called velvet, it has not nap or pile that is a distinguishing characteristic of such a textile.

THIBET cloth kept by tailors occupies a place between a melton and a cheviot; it is more elastic and softer than melton and not so nappy as as cheviot; the nap is very slight and lays close to the surface of the cloth, giving the goods a rough unfinished appearance. The name **Thibet** has also been applied to a kind of camelette, formerly made of goat's hair, but now wool, and is of shaggy aspect, used for ladies' dresses.

THIMBLE by some persons is said to be a corruption of thumb-bell, so called from its shape. By others thimble is said to be derived from "thymel" a thumb stall which is used by sail makers to protect the thumb.

THREAD.—The first sewing thread ever made of cotton in this country was produced at Pawtucket, R. I., in 1794. Prior to this time linen had been the material used for making thread, and a spinning wheel for its manufacture was as common in every household as a tea-kettle. Each family in the early days spun their own thread, of flax of their own raising. The idea of using cotton is said to have been suggested by Mrs. Slater, wife of Samuel Slater, the pioneer of the cotton industry in the United States.

With the invention of the spinning jenny and other improved machinery for the manufacture of thread, the development, of this industry has been very rapid; the busy distaff and spinning wheel of our grand-mothers have been relegated to dusty garrets and forgotten, or are exhibited in museums as objects of curiosity.

Thread for sewing is made of the best "Sea Island" cotton, on account of the length of its fibre. The first thing that is done with the raw cotton is to subject it to the "picker" process, by which the cotton from several bales is mixed to secure uniformity. During this operation much waste in the form of dust, dirt and short fibres is separated from the good cotton by the picker. Next the picked cotton is wound on a machine, in sheets or laps, into a roll. Now comes the carding, by which these sheets are combed out into long parallel fibres, and drawn through a funnel shaped opening, which condenses it into a single thread or sliver. Then comes the fast "roving" process which consists in winding and twisting these threads into minute strands or cords, numbered from 1 to 300. Two of the cords thus produced are wound together on a spool and then twisted from that spool to another, and then three threads of two cords each are twisted together, forming a six-cord thread. (Each number of thread has its own twist, that is the number of turns it gets to the inch.) One who has followed the process sees the cotton gradually transformed from a wide sheet of loose cotton to a thread that will pass through the eye of the smallest needle. The six-cord thread is at least taken from the bobbins and reeled into a skein, in which form it is bleached or dyed. A large quantity of thread is now polished, and is known in trade as *glace*. Of late there has been an increased demand for crochet thread, the manufacture of which is similar to the process of ordinary sewing cotton, described above. From the skein the thread is wound back on little white birch spools and is ready for the market. The machine that regulates the last winding measures the number of yards wound on each spool, and the paper labels that decorate the ends are cut and pasted on by machinery with great rapidity.

But few persons, even in the trade, understand why thread is numbered 8, 10, 12, 20, etc., up to 200, although the reason is very simple.

When	1	hank	of	cotton	thread	(	840	yds)	weigh	1	lb.	it	is	sized	No.	1
"	2	"	"	"	"	"	(	1680	"	"	1	"	"	"	"	2
"	10	"	"	"	"	"	(	8400	"	"	1	"	"	"	"	10
"	50	"	"	"	"	"	(	42000	"	"	1	"	"	"	"	50
"	100	"	"	"	"	"	(	84000	"	"	1	"	"	"	"	100

and so on. This is the whole of the thread measurement. The early manufactured thread was but three-cord, and took its number from the size of the yarn from which it was made; three strands of No. 60 yarn made No. 60 thread though in point of fact, the actual calibre of No. 60

thread would equal No. 20 yarn, being three 60 strands combined. When the sewing machine came into market as the great consumer of thread, the six-cord, cotton had to be made a smoother product than formerly for mere hand needles. As thread numbers were already established, they were not altered for the new article, and consequently No. 60 six-cord and No. 60 three-cord are identical in size as well as in number. To effect this of course the six-cord thread had to be made of strands just twice as fine as that demanded by three-cord. (For instance No. 60 six-cord is made of six strands of No. 120 yarn; No. 60 three-cord being made of three strands of No. 60 yarn.)

TICKING.—A strong cloth used chiefly for making beds, covering, mattresses, paillasses etc. Formerly it was always made of linen, but cotton is now largely used for this purpose. A very general characteristic of ticking is that it is woven in stripes of two colors blue and white, used also in fancy colors for ladies' skirts and petticoats.

TOILINETTE.—[See VALENTIA.]

TORCHON LACE.—Torchon lace was made in the 17th century, and from that time has been largely used on the Continent. It is simple thread lace that at one time was known as Beggars' lace. The cheap Torchon lace now largely sold is made by machinery. [See LACE.]

TRICOT (tre-co) is the French word for stocking-net; *tricotage* means knitting, and *tricoteur*, knitter; hence the particular weave known as tricot, often found in flannel and other woolen cloths, is so called on account of its imitation of and intended resemblance to a knitted web. Tricot signifies a fine woolen material of the weave above referred to, used for men's clothing; and a variety of ladies' dress flannel, usually double width.

TROUSERS.—(From French *trousses*, corresponding with the English word breeches.) In United States the original word trousers is almost laid aside, the term being only applied to the loose garments of sailors or laborers, while pantaloons is used in all other cases. The English adhere to the old term in respect equally to the dress of gentlemen and all others, making much less use than we do of the word *pantaloons*.

TULLE.—Properly *Point de Tulle*, a fine net, so called from the town of that name, capital of Correze, France. Machinery for the manufacture of tulle was invented about the year 1800 and was copied after the Bobbinet invention. [See BOBBINET.] At first it was termed *Tulle simple et double*; in 1825, *tulle bobine grenadine*; next it was termed "zephyr," and finally "illusion." At present it is a plain fine silk net, made after the manner of Bobbinet and dyed in different colors; called either Tulle or Illusion.

TURKEY RED.—This celebrated color—the most durable and one of the most beautiful which has yet been produced in cotton—is dyed by a process practiced in India from immemorial times as a well-guarded secret with dyers. It passed through Asia into Turkey, (whence its name) and was introduced into France about the middle of the last century, where the process was made public in 1803.

There is a mode of dyeing cotton red with madder practiced by calico printers—the cloth being previously bleached with chloride of lime—when the whole process occupies only a day or two. But in the case of turkey-red, which is also a madder dye, the operation is long and tedious. The following is an outline of the steps of the turkey-red process, as usually conducted: 1st. Unbleached calico cloth is thoroughly washed and then boiled for some time in a solution of carbonate of soda. 2nd. The cloth is soaked in a bath containing a soapy emulsion of olive oil, sheep's dung, carbonate of sodium and water and allowed to remain for a week or more soaking in the solution, after which it is aired in the fields and dried in stoves. This operation is repeated three times, and hence the cloth is sometimes called "oil-red" calico. 3. The next operation consists in passing through an emulsion of olive oil and carbonate of sodium, but without sheep's dung, after which it is aired and dried as in the last operation. This is repeated at least four times. 4 The cloth now requires to be soaked in a weak alkaline lye of pearl ash and soda, in order to remove any excess of oil. 5. The cloth is warmed in a bath containing a mixture of powdered oak galls and sumach. 6. Next it is steeped in a solution of alum. Without this last treatment the dye would not be fixed upon the cotton. When thoroughly washed the cloth is ready to receive the red dye, which is produced by immersing it in a decoction of madder, to which is added chalk and bullock's blood. It is put into the dye vat cold and kept in it for two hours, after it has been raised to the boiling point. 8. Finally the cloth is cleared and brightened by boiling in a solution of chloride of lime. The exact reasons for so many operations requisite in turkey-red dyeing are not well understood, which accounts for the fact that so far it has been impossible to shorten the process. The two most essential points are the oiling and dyeing with madder, but if any of the numerous dippings, in the emulsions and solutions are left out, the color is duller and more inferior in proportion to the number of omissions. Besides being largely used in its plain red state, turkey-red calico is figured by ordinary calico printing machines, where, by proper arrangements the different colors of a pattern or figure are printed in the parts where the red color is discharged by chloride of lime. [See BANDANA and MADDER.] This color is used in dyeing linen and cotton table cloths, etc., but never used in dyeing wool.

TURKISH TOWELS.—From the invention of terry cloth, q. v. to the manufacture of Turkish towels was but a single step, and when the first towel was presented to Queen Victoria, she was so much pleased with it that she awarded a medal to the inventor, Samuel Holt, and the favor thus shown by royalty for the new product, was of course soon adopted by her loyal subjects. Why we should call these towels “Turkish,” is difficult to understand, considering that the fabric was first made in England. The only explanation which may hold good is that soon after the invention was made, large quantities were shipped to Turkey, where they were, and are still, held in high estimation by the natives.

TWEED.—A name given to a certain kind of woolen cloth, originally made in factories on the Tweed river, in Scotland—hence its name. It is prepared solely for men’s clothing, and is of an open, soft, flexible nature, twill woven, which gives the structure a curious appearance of diagonal lines. Tweeds differ from worsteds and broad cloths in being so finely spun or closely woven, but most of all in not being so thoroughly felted q. v. Tweed yarns are dyed before being woven. Sometimes three or four colors are spun or twisted into one thread. The chief difference between other fine cloths and tweeds, irrespective of pattern, arises from the fulling which in the case of tweeds only occupies a few hours, but with broad-cloths, cheviots etc., occupies several days. The result is that broad-cloths and cheviots are so completely felted that the surface betrays no appearance, but in Tweeds the pattern as well as the warp and woof can be distinctly seen. Tweeds were, when first began to be manufactured, all shepard checks, but are now made in all kinds of checks and stripes, as well as plain styles, besides an endless variety of mixtures under the general name of “fancy” tweeds.

TWILL.—From German *Twillen*, (to separate into two parts.) An appearance of diagonal lines or ribs produced in textile fabrics by causing the weft threads to pass *over one* and under *two*, or over one and under *three* or *more* warp threads, instead of over one and under the next in regular succession, as in plain weaving. The object in twill weaving is to increase the bulk or bulkiness of a fabric and to ornament it. The order of working the threads in permits the introduction of more material into the fabric, and so make it more bulky and closer in construction than in plain weaving. Many different patterns or surfaces can be produced by twilling; that is, by changing the order of passing the weft over the warp threads; as a satin twill, plain twill, 3-leaf or cashmere twill, Damask twill, q. v. The effect of each of these, however, is a distinct pattern upon the fabric, a species of cord running in a diagonal direction across the web.

TWINE.—Twine as is commonly known is a strong thread, cord, or string of two or three smaller threads or strands twisted together. It is usually numbered as follows: Nos. 1, 2, 3, 4, flax ball twines, suitable for hardware manufactures, etc.; Nos. 5, 6, 7, 8, fine flax, grey and colored twine for stationers, etc.; Nos. 9, 10, 11, 12, 13, red, blue and other colors. for druggists, etc.; Nos. 14, 16, 17, bleached flax twine for fancy goods, cutlery, etc.; Nos. 15, and 18, jute and cotton twine for grocers, tea dealers, etc. There are also seine twine, patent twine, gill twine, four-ply twine, etc. Sewing twine for sails weighs at the rate of 360 to 430 fathoms to the pound. One pound of this twine will sew 160 yards of seam, on an average.

U

UMBRELLA originates from the Italian word *ombrello*—"a little shade." The umbrella lays claims to a pedigree of the highest antiquity, having been put to different uses amongst the nations of the East from time immemorial. In China it was in constant use two centuries prior to the Christian Era; and anterior to this, representations of it may be found upon the ancient slabs of Nineveh, and the frescos of Thebes and Memphis, also upon Etruscan vases. Preceding by many centuries the Roman period, umbrellas distinctly figured are to be met with. At present the gradations are infinite, ranging from the elaborate excellence of the parachute to the hermaphrodite object which serves by turns as shelter and support, which, though unable to claim a place in the aristocracy of its race, is yet eminently respectable.

UNDERLINEN, OR UNDERWEAR, is a general term which includes every article worn beneath the external or outer garments, by day or night, both of men and women. It is made of a variety of materials, silk, cotton, wool, linen, stockinette, spun silk, lace, cambric, merino, flannel, nainsook, elastic, jean, etc. **Union Underwear** is a particular style in which the drawers and vest are combined together as one garment.

UNION CASSIMERE indicates a mixed material found exclusively in ready made clothing. It is made with cotton warp and wool filling, the pattern of the cloth being woven in in the loom. The main difference between Satinet and Union Cassimere is the method of producing the pattern—in the former it being printed on, and in the latter woven in, plain and distinct.

UPHOLSTERY is a term by which every description of textile employed in the making and covering of furniture is designated. Varieties of silk, velvet, horse-hair, reps, chintz, leather, cloth, moreen, Utrecht velvet, cretonnes, muslin, linen, dimity, etc., are all included under the name of "upholstery cloths or stuffs."

UTRECHT VELVET, or Furniture Plush, was formerly extensively manufactured in the city of Utrecht, Holland, hence the name; but more recently the trade has centered at Amiens, France, and in Connecticut. It is used for upholstering railway cars and office furniture. It has a Mohair pile woven into a linen foundation, and is an exceedingly durable material. [See VELVET, PLUSH, WEAVING.]

V

VALENTIA is a mixed material, having a cotton warp, or a cotton and silk warp for the silk portion, and a worsted weft of fine British wool. Valentias are produced in large quantities at Spitalfields, and the patterns are variegated and showy in appearance. They are manufactured exclusively for men's fancy vests, and are very similar to the cloth termed Toilinette, which is composed of silk and cotton and "woolen" yarn, hence is a somewhat softer fabric than Valentia.

VELOURS is a French term signifying velvet, and is derived from the Latin *villosus*, "shaggy." Among old English writers, and in the entries made in the lists of the royal wardrobes of England, the terms *velure* and *velures* are found, as well as *vallonettes* mentioned by Chaucer. Velours is a special description of furniture, carpet, velvet or plush, partly of linen and partly of double cotton warps and mohair yarn weft, first manufactured in Prussia. At present Velours also denotes a particular kind of cotton curtain fabric, exactly alike on both sides, woven with a coarse stiff pile on the Terry cloth q. v. principle, and dyed in solid colors. It has somewhat the appearance of plush or Terry cloaking with a pile on either side.

VELVET.—(From It. *Velluto*, "shaggy.")—In all probability the art of velvet weaving originated in China. About the beginning of the 14th century it is first mentioned in English inventories, though fustian which differs from velvet only in material, is spoken of as early as 1321. The processes employed in the manufacture of velvet are the same as in making corduroy, plush, fustian, beaverteen, Brussels and Wilton carpets. Its peculiar character is produced by the insertion of what seems to be short pieces of silk thread secured under the weft thread, their

ends standing upright and so close together as to completely conceal the foundation beneath. In weaving velvet, besides the ordinary warp and weft which are usually arranged as in twill weaving, there is also an *extra warp thread*, called pile threads, arranged in the loom *parallel* to the regular warp, and much longer, which in the progress of weaving are passed over a fine brass wire, which is laid across the whole fabric, over the warp threads. The working of a treadle carries the "pile threads" down over the wire, forming a loop, when they are fastened by the next throw of the shuttle. Another wire is placed in the same position for the next row of loops across the fabric, and these are produced the same as above. Two wires only are used and these are freed in turns by the same process which converts the loops into a pile. Each of them has a groove along its top surface, and on this is run a sharp edged knife, thus *cutting the loops*, and leaving two ends of each one projecting above the fabric. The velvet is now trimmed evenly, brushed up and dressed to produce the velvety pile. Fine velvets contain 40 to 50 loops to an inch length of fabric, and their production is therefore exceedingly slow and laborious. In silk velvets the warp and pile threads are both organzine silk, which is the strongest used in weaving. Lyons, France, is the principal seat of manufacture of broad velvets, and such as those for cloak making, called **Ponson Velvets**, and St. Etienne is the principal seat of velvet ribbon manufacture.

There are two kinds of velvet which have the effect of being stamped or embossed, although only one of them has a pattern produced by stamping. This latter or "real stamped velvet," which is of comparatively inferior quality, has a silk face and cotton back. It is woven with a silk pile and by means of heated stamping irons formed into various patterns. It is so pressed as to make the *portions between those that are raised* appear as if of satin make. Stamped velvet is employed for the making of dress bodices and trimmings.

The superior velvet known as **Velvet Broche**, has a design in the silk pile; woven into the web and not stamped.

Terry Velvet is made entirely of silk, having fine ribs or cords on the best side. Inferior kinds are also made with a cotton back. It is chiefly used for trimmings, particularly for children's garments. Although called velvet, it has not the nap or pile that is a distinguishing characteristic of such a textile.

VELVETEENS are cotton velvets, and are always wider than their silk sisters, although woven in exactly the same manner. The making of these goods is mostly, if not wholly, in the hands of British manufacturers. All efforts to make the goods in the United States have been unsuccessful. A limited amount of the cheaper grades of the raw grey cloth is imported and dyed here, (such as "Vulcan,"

“Elberon” and “H”) but there are no velvet mills in operation making the cloth. Dyers claim that the most important branch of black-dyeing upon cotton goods, is that employed for cotton velvets or velveteens, in which it is desired to produce a rich lustrous effect; the process is long, tedious and uncertain, consisting of successive applications of sumach, acetate of iron, logwood and fustic—the end chiefly aimed at being the production of a black with a blush or violet bloom. The English dyers formerly held a monopoly of this blue-black upon velvet, as it is called, but of late years our home dyers have shown themselves very formidable competitors. **English Fast Pile Velveteen** is a velveteen made in England after a new and superior method, insuring the fixity and firm adhesion of the pile, which sometimes wears out of the web when manufactured according to the original plan. The names given to it vary according to the fancy of the several manufacturers who produce it. Among them it is known as “Imperial,” “Louis,” “Brunswick Finish,” “Mancunium,” and “Peacock.”

VENETIAN carpets usually have a warp of hard twisted worsted or cotton. These are so woven that the warp gives the pattern, the weft being wholly concealed. This is the cause of the stripes which these carpets usually exhibit. Sometimes by a suitable selection of the weft colors the stripes may be converted into checks, twilled patterns, etc. For this carpet, cotton makes a better warp than hemp. However, the best Venetians are all of wool. The tariff on woolen warp carpets is 19 cents per square yard and 40 per cent. ad valorem.

VIGOGNE CLOTH (vi-gone) is a delicate all wool textile, and is produced in neutral colors—greys, lavenders and steel, as well as black. The commoner kinds have a small *armure* woven in them. Vigogne is the French name for the wool of the Peruvian sheep, or for a woolen stuff of the finest Spanish wool. It is very suitable as a summer dress material, for which it was designed.

W

WALE.—A ridge or streak rising above the surface of the cloth, running the entire width or length of the piece.

WARP.—The threads which are extended lengthwise in the loom and crossed by the woof or filling. Warp is sometimes called the chain.

WASH BLONDE is the name given to a species of narrow bobbinet, or Brussels net, suitable for quillings. It was formerly produced from unbleached cotton and was termed "Nankin" and Blonde Net, from its yellow or blonde color. At present dyed in all colors, and distinguished by its narrow width. The quality of both Wash Blonde and Brussels Net depends upon the smallness of the meshes, their equality in size and the regularity of the hexagons.

WATERED silks, watered ribbons, watered moreens, are those which have been subjected to a process by which the surface assumes a variety of shades, as if the cloth were covered with a multitude of waving and intersecting linens. [See MOIRE.] The French speak of this class of goods as *la Moire*, while the English term them watered moreen. Tabby is a silk fabric wove in a similar manner. To "tabby" is but another expression for "to water," and the adjective *tabby*, usually referring to a brindled cat, signifies streaked with waving lines.

WEAVING is the art of forming cloth by the interlacing of yarn in a loom. In weaving two sets of yarn is used—the warp and the weft. The warp consists of the threads of yarn which extend in parallel lines from end to end, the whole length of the web. The weft yarn crosses and intersects the warp at right angles and fills up the breadth of the web. Weaving is thus distinct from knitting, netting, plaiting or felting. According to Pliny, Semiramis, the Assyrian Queen, was believed to have been the inventress of the art of weaving. "Minerva is, in some of the ancient statues, represented with a distaff to intimate that she taught men the art of spinning; and this honor is given by the Egyptians to Isis; by the Mohammedans to a son of Japeth; by the Chinese to the consort of their Emperor Yas; and by the Peruvians to Mamacella, wife to Manco-Capac, their first sovereign." These traditions serve only to carry the invaluable art of spinning and weaving up to an extremely remote period, long prior to that of authentic history.

Apparently the varieties of woven cloth are endless; but these differences are only in part due to the method of weaving. The textile materials employed, the methods of spinning and preparing the yarns, the dye colors resorted to and the finishing processes may vary indefinitely, and so contribute to give variety of character to the resultant product. The particular factory brands of a given material are often innumerable, for these depend upon the fertile fancy of the manufacturer, and are often so near alike that the *name* is the only difference. The complexities of the art of weaving, in itself, are reducible to a few fundamental operations, which do not of *necessity* demand intricate machinery. For producing the India muslins of the present day with their marvelous delicacy of texture, and also for the elaborate and sumptuous shawls of Cashmere, the native weavers have only rude and simple looms. But

patient and tedious handwork, in these instances, is devoted to produce effects which modern machinery can secure with as great rapidity, as in the case of the plainest fabric.

The series of inventions which have led up to the ingenious looms of the present day, began with the invention of the fly shuttle in 1733, and culminated with the Jacquard appliance in 1802, the principle of which has never since been improved upon. The fundamental principles of all weaving may be classed under the heads of Plain Weaving, Twill Weaving, Figure Weaving, Gauze Weaving, Double Weaving and Pile Weaving:

Plain Weaving, such as is found in ordinary calico, muslin or linen, will on examination, be found to consist of two sets of threads, the one intersecting the other at right angles, with each single thread passing alternately over one and under one in regular order.

Twill Weaving (from German *twillen*, to separate in two parts) produces an appearance of diagonal lines or ribs, caused by the weft threads passing over one and under two, or over one and under three, (or *more*) warp threads, instead of over one and under the next in regular succession, as in plain weaving. Many varieties and combinations are possible with this class of weaving: a Cashmere twill may be made, that is, a 4-leaf combination, in which the weft passes alternately over and under two warp ends, and two picks are shot for each shed. Further, zigzags, squares, and other angled designs can be produced by reversing the order of treading, and thereby causing the twill to run in different directions. [See HERRINGBONE.]

Figure Weaving.—To produce a complicated and irregular pattern, a large number of different sheds of warps must be provided, and to secure with promptitude and certainty such manifold and complicated sheddings, many of the most elegant and ingenious devices ever applied to mechanism have been invented; but those who wish to pursue the subject in detail and obtain a more complete understanding of figured weaving should witness the modern Jacquard loom in actual operation.

Double Weaving.—For many purposes the weaving of double cloth is important. It permits the formation of a background of cotton or other inferior material, with a surface of finest texture; and it affords great scope for the formation of colored patterns, allowing also the production of double-faced textures, which may, or may not correspond in pattern on both sides, according to pleasure. It, moreover, increases the weight of woven fabrics, and is the basis of tubular weaving, such as practiced in making hose, tubes, seamless bags, etc. There are three classes of double textures: The first consists of double warp surfaces, with the filling in the center; in the second it is the reverse, a warp center and two weft surfaces. In the third case the cloth may consist

of two distinct warps and wefts throughout, and practically be two separate cloths. These, if bound at the selvages, would become woven tubes, and if at regular intervals over the surface, a warp thread or filling thread passes from one side into the other, they are united as one texture.

Gauze Weaving.—Hitherto we have dealt only with methods of weaving in which the warp threads run parallel with each other, and are intersected at right angles by the weft. In gauze weaving effects midway between lace and plain cloth are produced, the warp threads being made to intertwist more or less among themselves, producing a light open texture, such as Lisle thread and Balbriggan goods. Plain gauze is simply a plain open weave, in which two contiguous threads of warp make a half twist around each other at every pick, the cloth being in appearance similar to a knitted fabric.

Pile Weaving.—A pile fabric is woven with a looped or otherwise raised surface. “Looped” pile is descriptive of any fabric in which the woven loops remain uncut, as in Brussels and Tapestry carpets, and in Terry velvets and cloaking. When these loops are cut in the finished texture, then the material is a “cut” pile, such as ordinary velvet, plush, fustian, imitation sealskin, Wilton carpets, etc. For the weaving of ordinary pile fabrics two sets of warp threads are required, the regular beam warp and the “pile” warp. The foundation, or back, may be woven plain or twilled. In weaving the foundation, at every third pick a small round wire is partially woven into the cloth, and the “pile” warp is brought up *over* and *around* this wire, and thus a row of loops is formed across the web. If a “looped” pile is desired it only remains to pull the wires out from behind and weave them in again in front, as the work proceeds. But if a cut pile is being made, then the loops must be cut along the top of the wires before slipping them out of the cloth. In some cases the wires are furnished with a knife edge on one side, and the loops are thus cut as the wires are withdrawn. The pile thus produced, is afterwards made uniform and level by shearing with a machine which in principle is very similar to a common lawn mower. This shearing operation was formerly accomplished by hand, with the use of narrow, pointed scissors, usually about two feet in length. The workmen by practice became so skillful in wielding these that there is no perceptible difference in the appearance of the old hand work and the present machine-sheared product.

Cloth does not come from the loom in a finished state, as many imagine. If it is woollen cloth it has a bare, rough and fuzzy look, and is at this stage called the *raw thread*. After leaving the loom it requires to be scoured and washed; burred—to remove any knots, burrs or imperfections; fullled, q. v. teasled, q. v. sheared, boiled and scalded to impart a lustre

to it, and prevent spotting with rain. After this it is dyed (if not previously done in the yarn), and finally pressed between polished iron plates in a powerful hydraulic press; after which it is folded or rolled, and is ready for shipment.

When cotton cloth is taken from the loom, it has a covering of surface hairs or minute threads, which communicate a fibrous down or nap to the cloth, and if allowed to remain would interfere with the uniform application of the printed colors, or dull the distinct appearance of the woven pattern. This surface down has to be got rid of by the process of singeing, *q. v.* during which the cloth is drawn over a red hot iron or copper bar, or through a series of gas jets. To accomplish this, the cloth is first brought into contact with roller brushes, which *raise* the fuzz on the surfaces, then passes lightly over the white hot metal bar, or through the gas jets, and is wound on to a roller. This process is repeated twice on the face of the cloth to be printed, and once on the back. When well singed, cotton cloth undergoes the operation of bleaching, *q. v.* and is thereafter calendered *q. v.*

On being removed from the loom certain cotton cloths are also teased for the purpose of raising on one or both surfaces a nap, for the procurement of warmth or softness, as seen in canton flannels, cotton plush, furniture drapery and sometimes in flannelettes.

It will doubtless interest a portion of the trade to learn that the domestic title "wife" is derived from "to weave," as she was distinguished so much from the balance of her family in the olden time by her labors at the loom. The Saxon word for weave was *wefan*, and was also applied to a woman who worked at the loom and made a web. The adoption of the name "wife" from the art of weaving is a natural sequence to that of giving the name "spinster" to an unmarried woman,—for the girl was supposed to spin the yarn, which when woven into clothing, she was to wear as the garments of a wife. For a thousand years, or for aught we know, ten thousand, prior to the invention of the power loom, each household was necessarily the manufacturers of their own cloth and the makers of their own clothing. It was the practice of the husband and sons to tend the sheep and cultivate the flax; of the "spinster" to prepare the yarns, by the aid of distaff and spinning wheel; and of the wife, on account of her greater experience, to weave the web. In India at the present day the yarns for the lightest and airiest fabrics known in the world are spun by the hands of young women, by reason of their nimbler fingers and more sensitive touch.

WEFT.—The woof or filling of cloth. The threads that cross the warp from selvage to selvage.

WHALEBONE is the inaccurate term applied to the horny blades which take the place of teeth in the mouths of large whales. They number about 300 in the case of full grown whales, are from 10 to 15 feet long, and serve the purpose of retaining the small fishes which compose its food. The "whalebone" is not bone, but bears a strong resemblance to the horns of cattle and the nails and hair of other animals. In preparing the raw blades for commercial purposes, they are first boiled in water for several hours, until soft enough to cut easily with a common knife. The workman then cuts them into the different lengths and thicknesses, after which they are dyed black. Whales furnishing the right quality of whalebone are now very scarce, and \$7290 per ton is the average price paid for the best Greenland blades; the high price has led to the substitution for it of steel, vulcanite, rattan, featherbone and wood.

WIGAN.—A very coarse and heavily sized cotton cloth, used for lining the bottom of ladies' dresses, in order to make them keep the shape desired. Wigan was the cloth upon which was formerly fixed the hair of a wig, or periwig, being stiffered so that it would fit the head in a comfortable and proper manner.

WOOF.—The threads which cross the warp in weaving. The weft or filling.

WOOL is a form of hair, distinguished by its soft and wavy or curly structure, and by its highly serrated or scaly surface. Sheep are by far the most important producers of wool, but by no means the only animal which yields wool employed for industrial purposes. The alpaca, the llama, the Angora goat and the camel are all wool producers; while the Cashemere goat of the Himalayan mountains yield the most costly wool in the world. At what point it can be said that an animal fibre ceases to be hair and becomes wool it is impossible to determine, because in every characteristic the one class by imperceptible gradations merges into the other, so that a continuous chain can be formed from the finest and softest Merino to the rigid bristles of the wild boar.

Next to cotton, wool is the most important of all textile fibres, and from the earliest dawn of human history has formed a striking feature in the condition of mankind. The ease with which it may be made into thread, and owing to the comfort derived from clothing of woolen texture, it naturally would be the textile first used by mankind as a covering to shield him from the elements. The testimony of all ancient records goes to prove the high antiquity of woolen textures and the early importance of sheep.

Sheep were first introduced into this country at Jamestown, Virginia, in 1609, and in 1633 the animals were first brought to Boston. Ten

years later a fulling mill was erected at Rowler, close by Boston, where first was began cloth making in the Western world. The "factory" woolen industry, however, was not established till the close of the 18th century, and it is recorded that the first carding machine put in operation was constructed in 1794. [See HOME WEAVING.]

As has already been indicated, the distinction between wool and hair lies chiefly in the great fineness, softness and waved delicacy of woolen fibre, combined with a highly serrated surface. Upon these minute points of difference, the value of wool chiefly depends, especially with regard to the great variety of its applications. If each fibre were straight and smooth, as in the case of hair, it would not retain the twisted state given to it by spinning, but would rapidly *untwist* when relieved from the force of the spinning wheel; but the *wavy* condition causes the fibres to become entangled with each other, and the little projecting points of the scales hook into each other and hold the fibres in close contact. *Moreover*, the deeper those scales fit into one another the closer becomes the structure of the thread, and consequently the cloth made of it. This peculiarity also gives to wool the quality of Felting q. v. These scales or serrations are *most* numerous, acute and pointed in fine wools; as many as 2800 per inch having been counted in specimens of the finest Saxony wool. In Leicester wool, which is long and bright, the serrations are fewer in number, counting about 1800, and also less pronounced in character, the fibre presenting a smoother and less waved appearance. In some inferior wools the serrations are not as many as 500 per inch. A similar difference may be noted in the fineness of the fibres. Saxony lamb's wool has a diameter of from one-fifteen hundredth to one-eighteen hundredth of an inch, while Texas "coarse" may rise to a diameter of one-two hundred and seventy-fifth of an inch. In length of staple, wool also varies greatly, attaining in "combing" wools a length of 15 to 20 inches. As a rule the fine felting wools are short in staple, these constituting "carding" or "woolen" yarn wools; and the longer are lustrous and comparatively straight, thus being more suitable for "combing" or "worsted" wools. The latter wools approach Mohair and Alpaca in their characters, and are prepared and spun by the same machinery.

The wool market is supplied from almost every quarter of the globe, the qualities and varieties being numerous. The range of "woolen" and "worsted" manufacture is also very wide, the raw material for one class not being at all suitable or fitted for the other. Much more than is the case in any *other* textile industry, we have in the woolen trades practically a series of separate and distinct industries, each with a different class of raw wool. The main distinctions are (1) carding wools, in which felting qualities are desirable; (2) combing wools, requiring

length of staple and brightness of fibre, for making hard-spun, non-felting worsteds; and (3) carpet and knitting wools, in which a long and strong and somewhat coarse staple is the essential quality. Breeding, climate and different kinds of food are the factors in securing the different qualities.

An eminent authority on wool directs particular attention to the influence on the quality of the fleece, of the *food* which the sheep eats, and dwells on the following four points: (1) To obtain the right quality of good wool the sheep must be well fed; (2) if the sheep receives too much food, or food which is not sufficiently nutritive, the wool lacks strength, is destitute of grease, and becomes in consequence flabby, rough to the touch, dry and harsh; (3) regularity in the distribution of the food is very important; faults in this matter affect the quality of the wool; (4) there is a difference of opinion about the action of certain foods on wool. All, however, agree in ascribing a marked influence to fertile pastures. The wool of sheep that enjoy such pasturage is abundant; the fibre is long and is characterized by its softness, whiteness, lustre and strength. It has been proven conclusively that all foods which promote perspiration produce fine wool.

It becomes necessary here to indicate the specific distinction between "worsted" and "woolen" yarns and cloths. In a general way it may be said that "woolen" yarns are those made from short wools possessed of high felting qualities, which are prepared by a process of carding, in which the fibres are as far as possible crossed and interlaced with each other, forming a sort of light, fluffy yarn, which suits the material when woven into cloth for being brought into the semi-felted condition by fulling, which is the distinguishing characteristic of "woolen" cloth. On the other hand, "worsted" yarns are generally made from the long and lustrous varieties of wool, the fibres instead of being "carded," are so "combed" as to bring them as far as possible to lie parallel to each other, and the yarn is spun into a compact, smooth and level thread, which when woven into cloth, is not fulled or felted. "Worsted" yarn requires to be harder twisted, because the fibres have not the *felting* qualities of "woolen," and hence will not wear unless the yarn is hard twisted. The surface of a "woolen" fabric is soft, oily, and pleasant to the touch, but a "worsted surface" is hard and slippery, and is therefore unpleasant in feeling. Each has its merits and defects. The felting quality of "woolens" causes the fabric to draw together or shrink, when wet, a defect that can only be overcome by special care in washing, which is seldom possible to command. A "worsted" fabric is much less affected, because the structure of its fibres precludes much drawing together. At all points, however, "woolen" and "worsted" yarns as thus defined cut into each other to some extent; some "woolens" being made

from longer wool than some "worsted," and vice versa; while fulling or felting is a process done in all degrees—from a very little to a great deal—"woolens" sometimes not being at all fulled, while to certain "worsted" a felted finish is given. The fundamental distinction between the two rests in the crossing and interlacing of the fibres in preparing "woolen" yarn, while for "worsted" yarn the fibres are treated by processes designed to bring them into a smooth, parallel relationship to each other. Broadcloth, doeskin, cassimere, melton, cheviot, frieze, beavers, etc. are representatives of the "woolen" class; while corkscrew, diagonal, say, serge, repp, etc. represent a few of the "worsted" class. Hosiery forms a class apart, as do also the wools used in the manufacture of carpets, shawls, alpaca and mohair textures. [See BLEACHING and WEAVING, MERINO, WOOLEN, WORSTED, and APPENDIX for TARIFF on wool and manufactures of wool.]

WOOLENS.—There are two great classes of manufactures using wool as a raw material: The one in which *carded* wool is employed, termed "woolen" fabrics; and the other, in which *combed* wool is used, termed "worsted" fabrics. [See WOOL.] One distinction between the two classes of fabrics is owing to the way the yarn for each is spun. Yarn for "woolen" cloth is very slightly twisted, so as to leave the fibres as free as possible for the felting process; "worsted" yarn, on the contrary, is hard spun, and made into a much stronger thread. Names are given to various kinds of "woolen" cloths according to the way they are finished, the special material of which they are made, and the purpose for which they are intended. The following are representative "woolens:" Broadcloth, meltons, beavers, pilot cloth, police cloth, cloakings, cassimeres, tweeds, ladies' cloth, flannels, blankets, chevots, doeskins, etc. In order to illustrate the differences between a "worsted" and a "woolen" fabric of exactly the same *weave*, compare the character and properties of a fine doeskin with those of a fine worsted of the corkscrew weave: The qualities of lustre, softness of handle, and fineness of texture are common to both these fabrics; but, however carefully the doeskin may be examined, if the pile or nap raised on the surface is not removed by either friction or singeing, the crossing of the threads will be found to be completely hid from view, causing the cloth to appear more like the result of felting wool than of interlacing individual threads of warp and with each other. On taking up the corkscrew worsted, although the crossing of the threads may not be followed without the aid of a magnifying glass, yet it is clear to the casual examiner of cloth that its leading feature (the "corkscrew") is obtained by the mode of interlacing the threads. This leads to an important conclusion, namely, that the soft, pliable and mellow condition, or rather structure, of a "woolen" thread make it capable of taking a different finish to that of "worsted,"

while the latter is most suitable to fabrics where the *weave* is intended to be a prominent feature of the pattern. The well-defined surface of the worsted thread fully develops the effect of the make or design in woven goods, and hence the large variety of *weave effects* seen in worsted fabrics for both ladies' and gentlemen's wear. The soft and pliable nature of "woolen" yarns fits them especially for napping, or in which the *finish* is to be the main feature. [See WOOL and WORSTED.]

WORSTED.—In the 15th century the production of woolen fabrics was a source of great wealth to many towns in eastern England, each town usually striving to excel in some special line or grade of woolen material. A sort of woolen yarn took its name from Worstead, in Norfolk county, where it was first made. This yarn had a closer and harder twist than any woolen thread then made, and could be woyen up into cloth of special fineness. For four hundred years this yarn has retained its identity, possessing the same distinctive features now as then.

"Worsted" yarn, as explained under the head of Wool, is spun in a different way from woolen yarn. In the former, the fibres of wool are *combed* out as near parallel with each other as possible; in the latter the wool is *carded*, and the fibres are crossed in every direction, so as to assist in the felting or fulling of the cloth after it is woven. Worsted yarn No 24, for the making of fine cloths, weighs 10 7-10 drachms per 560 yards. Yarn No 36, for delaines etc., weighs 7 1-10 drachms per 560 yards. Yarn for Henrietta and other fine dress goods weighs 6 4-10 drachms per 560 yards. Of this latter quality, in a pound of scoured wool costing say 40 cents, there would be 8400 yards of fine worsted yarn, a quantity sufficient to weave 5 yards of average width dress fabric. The added weight of dye matter, and the possible introduction of cotton, proportionately increase the profit of the manufacturer.

Those cloths manufactured from "worsted" yarns which are figured, are woven in various kinds of looms, but in the main by the Jacquard; plain kinds are woven in looms similar to those used for "woolens." When worsted goods leave the loom they require only a slight dressing, and in this respect differ much from "woolen" cloths, which we have seen require elaborate finishing processes. "Worsted" goods are usually classified according to the materials of which they are composed, viz:

1. Fabrics composed entirely of wool.
2. Fabrics composed of wool and cotton.
3. Fabrics composed of wool and silk.
4. Fabrics composed of alpaca and mohair, and the same mixed with cotton or silk.

The *first* of these classes includes the fabrics so well known under the head of "Merinos," also shalloons, serges, bunting, reps and a large proportion of the heavier fabrics used for men's clothing—notably all those in which the weave effect forms the pattern.

The *second* class includes Coburgs and Orleans cloths. Many of the games used in the all wool class are retained in this, with the prefix of the word "union;" also vestings, linings, shawls, quiltings, boot and shoe cloths, Toilinette, Valentia, etc.

The *third* class includes the rich poplins made chiefly in Dublin, Parmatta or Henrietta cloth, Cantons and Pongee cloths, Bombazine, Tabinets and Tammis.

The *fourth* class includes Alpaca and Mohair mixtures, plain, twilled and figured; lustres, Alpaca poplins, braids and glaces.

The unique structure of "worsted" yarn makes it invaluable in the production of textile fabrics. Lustre and uniformity of surface are its distinguishing characteristics. The method on which it is formed causes it to be capable of sustaining more tension, in proportion to size and thickness, than the pure "woolen" yarn. This characteristic, combined with its lustrous quality, gives it a pre-eminent position in the manufacture of fine coating. There is no other textile thread so highly adapted as the "worsted" to this important branch of the weaving industry. A finer cloth, possessing a brighter and clearer surface, is certainly producible with "worsted" than with "woolen" yarns.

The method of adjusting the fibres in the formation of "woolen" yarn is such as to produce a thread with a somewhat indefinite and fibrous surface, which neutralize the character of the weave, or destroys, in some degree, the effect in woven goods, due to crossing warp and weft threads at right angles with each other. As the fibres are prepared on a different system in "worsted" yarn construction, a class of weave ornamentation of a decided or marked type may be obtained by employing this kind of thread.

There is, in a word, more scope for pattern production of a weave description in the use of "worsted" than carded (or "woolen") yarns, for the level and regular structure of the former imparts a distinctness to every section of a pattern resulting from a combination of different weaves, and hence the variety of effects which obtain in "worsted" trouserings, coatings and dress goods, both in highly-colored patterns and in piece-dyed fabrics of one shade throughout. The advantage which the "worsted" possesses over the "woolen" thread for some classes are two-fold; (1) a smarter texture, that is, a clearer surface, and (2) a more definitely-pronounced weave effect.

As to the carded thread, ("woolen") it is more suitable than "worsted" for the cloths in which the colorings of the pattern require to be well blended together, the texture fibrous, or the fabric well fullered, as for example, fancy tweeds, chevots, and thick, heavy cloths, comprising doeskins, meltons, pilots, beavers and naps.

WOVEN LABELS are small strips of silk with a merchant's name and address woven into it, used to advertise the merchant selling the clothing, cloaks or jerseys upon which the label is sewed. Any merchant can order these labels with his own name and address in different colors woven into them, and these he can turn over to his clothing or cloak house to have sewed on every garment he may buy.

Y

YACHT CLOTH (yot) is a woolen fabric carried by tailors, for the manufacture of men's summer suits. It is a flannel, heavier than either ordinary flannel or serge, finished with a rough surface and piece-dyed usually in shades of dark blue.

YARN consists of any textile fibre prepared by the process of spinning for being woven into cloth. There is no exception to the making of woven cloth without the previous spinning of yarn. As weaving q. v. is shown to be among the earliest and most universal of the industries of mankind, the process of spinning yarn which of necessity precedes weaving, can be claimed as one of the primal employments of the race. Yarn is also the term applied to "woolen" fibre prepared for hand knitting. [See FACTORY, HANK, WOOL, COTTON, LINEN.]

Z

ZEPHYR is a fine "woolen" yarn made in two sizes, "split" and "single," used altogether for fancy work. [See GINGHAM.]



THE FOLLOWING TABLES GIVE THE WIDTHS, NUMBER OF YARDS TO THE POUND, AND COUNTS OF THREADS TO THE INCH OF THE PRINCIPAL MAKES OF DOMESTIC COTTONS, GINGHAMS, DRILLINGS, TICKS, DENIMS, ETC. ETC.

UNBLEACHED MUSLINS AND SHEETINGS.

NAME.	WIDTH YARDS COUNTS			NAME.	WIDTH YARDS COUNTS		
	IN INCHES	TO POUND	TO INCH		IN INCHES	TO POUND	TO INCH
Aberford St'rd.	36	2.84	48x48	Appleton, A	36	2.76	48x52
Acorn	36	4.00	50x56	" A	35	2.80	44x50
Adriatic	36			" FineAA	35	4.39	60x60
Agawan	36	4.00	52x42	" FineAA	35	4.37	60x56
Agawan, XX	30			" GG	35½	2.86	52x56
Alabama	27	12.00	36x36	" FineGG	35¾	4.53	56x60
Albany, LL	36	4.00	56x56	" R	36	3.70	64x64
" BB	36		64x72	" XX	36	4.17	56x56
Alaska	36	3.95	72x80	Archev Bunting	36	8.20	44x48
Alexandria	42			Argyle Family	36	3.62	60x62
Alpha	36	3.86	64x68	" "	40	3.25	60x62
Allendale	54			Arizona	36		
"	7-4	2.36	60x62	Ascot	36		68x76
"	8-5	2.02	60x62	Ashland	36		
"	9-4	1.84	60x62	Ashland	36	6.90	44x42
"	10-4	1.65	60x62	AtlanttAA impvd.	36	3.00	46x48
"	11-4	1.51	60x62	" AA	36	3.00	46x48
" L	12-4	1.28	60x62	" BB	30	3.59	48x48
Alligator	27	13.90	26x26	AtlanticA	36	2.85	48x48
"	26	13.55	40x32	" H	36	2.95	52x56
American, XX	36	2.54	52x56	" P	36	4.00	56x56
Amrcn. Mills, C.D.	36	3.98	52x48	" D	36	3.33	48x48
Amory Mfg. Co.	36	3.84	80x76	" V	30	3.61	52x52
"	36	3.68	76x76	" LL	36	5.03	64x62
" LL	40	3.39	80x72	" LL	36	4.94	64x62
Anchor, L	36	6.65	44x42	"	5-4	2.69	68x72
Androscoggin	46	3.36	72x72	"	5-4	2.74	68x68
"	48	3.10	72x72	"	6-4	2.18	68x68
"	7-4	2.14	72x72	"	7-4	1.82	68x68
"	8-4	1.87	72x72	"	8-4	1.68	68x68
"	9-4	1.66	72x72	"	9-4	1.46	68x68
"	10-4	1.50	72x72	"	10-4	1.32	68x68
"	11-4	1.38	72x72	"	11-4	1.24	68x68
Antilope, A	36	3.26	44x42	" Comet	36	3.45	64x62
Anniston	36	3.20	48x42	" Comet	40	3.11	65x64

Unbleached Muslins and Sheetings.—Continued.

NAME	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN INCHES	TO POUND	TO INCH		IN INCHES	TO POUND	TO INCH
Atlas R	35	3.79	60x60	Burliontan	4-4		
Augusta A No. 1	36	3.03	48x48	"	7-8		
"	30	3.63	40x40	Buckshead	36	2.85	48x48
"	27	4.52	40x40	Buck's Head	40	3.17	48x48
Aurora LL	36	4.00	56x60	Buckingham	36		
" C	31	5.50	40x42	Cabot, A (Dwight)	36	2.97	48x82
" R	36	3.59	68x68	" No. 10 (M)	35		76x90
" B	36		64x68	" W	36	3.15	48x58
Badger State LL	36	4.00	56x56	Calvert Mfg. Co.	36	2.93	48x48
" RR	36	3.55	64x62	"	36½	2.96	48x18
" R	36	3.45	64x62	Cambria	36		
Bangor J	30	4.13	48x42	Calumet, A	36	2.85	48x48
" F	36	2.90	48x48	" B	36	2.95	48x52
" BB	36	4.05	56x56	" C	36	3.30	56x60
" C	30	4.50	56x56	" LL	36	6.00	56x56
Beaver Dam LL	36	4.00	56x56	" X	36	5.15	48x48
Bedford R	30	5.96	64x68	Carlyle	28	5.25	54x64
Beacon	36	3.87	56x56	Cartwright	36	4.83	48x52
Bennington AL	36	3.15	64x68	" CW	36	4.64	52x56
" FF	36	2.90	48x48	Cartwright Mills	36	4.86	"
" M	36	3.54	60x62	Cary, G. W.	36	3.03	48x42
" R	30	6.00	64x62	Cast-Iron Brand C	36	3.13	68x72
Black Crow	36	3.70	60x62	"	36	3.07	68x76
"	36	3.66	60x62	Central Falls	36	6.22	44x40
Black Rock	36	3.61	64x68	Century B	36	3.69	68x73
Boott FF Standard	36	2.89	48x48	" B	36	4.08	"
" Sterling	36	3.60	60x64	" L	28½	4.82	64x62
" 2d*	36	3.81	60x60	Century Cotton B	36	3.69	68x72
" "	36	4.81	62x60	" " L	28	4.82	64x64
Boott Warwick C	34	4.09	58x60	Champion Mills K	31½	5.92	"
"	AL	36	68x68	Chesterfield " A	36	1.78	48x40
"	PL	40	68x68	Chittenango A	36	4.70	44x44
Boston	45	2.08	68x72	Clarion LL	36	4.00	
"	50	2.22	72x72	Clifton CCC	36	3.03	48x42
"	5-4	2.49	68x62	" CCC	36¼	2.87	"
"	6-4	2.29	68x68	" CC	31	3.64	"
"	7-4	1.97	72x72	Comet C	36	3.45	64x66
"	8-4	1.73	72x72	"	36	3.11	"
"	9-4	1.52	72x72	Common Sense	36	4.02	68x40
"	10-4	1.38	72x72	Conestoga W	36	3.61	60x72
Coynton	28	8.38	56x59	" S	33	4.18	"
Broadway	39	4.50	44x66	" G	30	4.73	"
Brighton Mills A	40	3.18		" D	28	5.11	"
" R	36	3.18		Conestogo	10-4	12.8	56x52
Busy Bee	36	4.35	64x64	"	11-4	1.12	"
"	33			Constitution	36	3.48	64x68
"	7-8			"	40	3.14	"

Unbleached Muslins and Sheetings.—Continued.

NAME	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN INCHES	TO POUND	TO INCH		IN INCHES	TO POUND	TO INCH
Constitution	42	2.93	"	Granite B	32	4.77	48x52
"	45	2.76	"	Graniteville A	36	3.00	48x52
"	48	2.76	64x62	" EE	36	3.00	48x48
Continental C	36	3.50	64x68	" C	27	4.67	40x40
" D	40	3.27	68x72	" RR	27	3.77	48x48
" D	40	3.05	64x72	" RR	29	3.42	52x52
" E	42	2.02	64x78	Great Falls E	36	3.00	52x56
" W	45	2.75	64x68	" " J	36	4.27	64x68
" H	48	2.63	"	" " N	36	5.17	50x48
Cotton Val. Mls. C	36	3.79	60x62	" " XX	36	4.60	56x56
Crown XXX	36	2.85	48x48	Great Western	36	2.98	48x48
Darlington	36	2.85	"	Greyst'ne St'm Mil	36	3.70	64x66
Decature	28	8.68	52x52	Hamilton Mills	36½	5.15	44x42
Des Moines	36	4.00	64x72	Harold M	36	4.17	59x60
Dwight	36	3.95	76x82	Hartford A	35	5.25	"
" Improved X	30	5.65	62x62	Henrietta EE	36	3.82	"
" " "	27	4.73	60x62	Here You Are	36¾	5.51	52x48
" DMC	36	3.31	72x72	Hildreth A	36½	2.86	44x48
" " "	36	3.97	79x80	Hill Semper Idem	36	4.10	80x62
" Star	36	4.02	08x76	Hill Semper Idem	36	3.83	"
" " "	40	3.38	"	Honest Household	36	4.15	72x82
" Anchor	36	3.25	72x72	Honest Width	36	3.50	60x60
" " "	40	3.00	"	" "	36¾	5.51	52x48
Echo Lake	36	3.60	72x68	Hoosier LL	36	4.00	"
"	40	3.49	64x62	Housewif Fr'nd LL	36	3.98	"
Eldorado	36	3.20	68x62	" extra	36	4.95	52x56
Enterprise EE	36	3.95	52x72	Hugenot Mills C	36	3.94	52x56
Ettrick AA	36½	2.81	48x48	" A	36	2.73	48x48
" EE	36	2.91	48x48	" A	36	3.37	48x48
Exeter A	36	4.08	64x62	" B	36	2.75	48x48
" S	33	4.56	64x62	Huron D	35½	4.53	56x56
" C	40	"	"	Indiana Stndrd C	36	3.25	40x50
Farmer A	35	4.00	58x58	" LL	36	4.00	56x56
" BB	32	4.55	64x62	Indian Head A	36	2.83	46x50
" extra No. 1	28	6.59	60x60	" E	48	2.12	46x50
Fine Sheetings	36	5.15	44x42	" D	49	2.57	44x50
Forest Mills	36	3.65	68x68	" B	30	3.42	48x48
Fountain City	36	4.63	48x54	Invincible	30	5.16	"
Foxhall A	27	4.33	36x42	Ironside A	36	3.02	48x48
Fruit of the Loom	8-4	1.70	68x68	Irving Mills XX	36	3.92	"
" " "	9-4	1.55	68x68	Jollico Mills B	30	3.70	"
" " "	10-4	1.32	68x68	Jones' long cloth C	39¾	3.59	"
Glendale	36	2.95	44x42	King Mfg Co AA	36	3.03	"
"	30	3.40	"	" EC	32	4.52	56x60
" B	36	4.02	"	Laconia	63	2.38	64x66
Good as Wheat	36	4.10	76x84	"	72	2.12	"
Grafton extra A	28	6.95	64x98	"	81	1.80	"

Unbleached Muslins and Sheetings.—Continued.

NAME	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	in inches	TO POUND	TO inch		in INCHES	TO POUND	TO INCH
Laconia	90	1.65	"	Mohawk Vly. Mls.	90	1.53	"
"	99	2.48	"	"	99	1.36	"
Lake George AA	36	3.15	50x42	"	A 31		56x56
" AA	36	4.38	56x60	Monticello, XXX	29½	3.82	50x38
Lanark A	36	4.27	42x46	Monadnock	72	2.55	62x60
" B	30	5.27	"	"	81	1.92	"
" C	27	6.00	"	"	90	1.82	"
Langley A	36	3.00	"	"	99	1.70	"
" A	50	3.90	"	"	A 36	5.20	48x52
"	27	4.60	"	Nonhansett Mfg. Co	36		72x62
Lehigh E	36	9.00	36x36	Mystic River	36	5.50	48x52
Lockwood A	39	3.60	68x76	Nashua, E, Fine	40	3.70	68x68
" C	30	4.35	"	" R	36	3.53	62x98
" B	36	3.88	68x68	" F	42	2.95	68x68
" R	36	3.75	68x72	" O	33	3.80	72x72
" D	28	7.20	68x68	" P	45	2.72	68x68
" F	30	6.59	"	" W	48	2.56	"
"	42	3.04	62x72	Nantuck Lheeting	90	2.19	68x56
"	54	2.32	68x72	Notchez, A	36	3.25	48x48
Lockwood	63	2.11	66x68	" F	36	4.15	40x42
"	72	1.75	"	" 2	35½	2.52	60x60
"	81	1.56	"	" 1	30	4.20	48x48
"	90	1.42	"	" G	30	5.00	40x42
"	99		"	" H	36		
Lonsdale	36		76x88	" S	30	4.50	60x62
Lowell	60	2.13	56x60	Neposet	36	5.50	52x52
Log Cabin	36			New Hartford, AA	36	4.60	42x42
Louise	35¾	3.54		Newburg	36	4.19	59x00
"	40		76x88	" C	31		
Lyman, A	45	2.35	48x48	Newberry Mills, A	36	2.87	48x48
" B	40	2.56	48x52	Newport, A	36	4.44	
Macon, A	36	2.87	48x48	" D	36	4.50	52x56
Mass, Fine J	29	4.03	"	Newmarket, B	36½	4.77	48x52
" Stand'd	36	2.90	"	" G	36	4.90	56x60
" BB	26	4.00	60x60	" N	36	4.00	62x62
" C	28	4.38	40x40	" DD	36	4.58	52x90
Marlboro	63	2.07	72x62	" X	36		
"	81		68x72	" K	31	5.86	62x68
"	81	1.45	72x82	" KK	29		
Maginnis, EE	36	4.00		New York Mills,	38	2.20	62x62
Master Workman D	36½	3.38		"	57	1.82	66x60
Mechanics, AA	36	12.23	32x28	"	81 78	1.25	64x68
Michigan, LL	36	4.00		"	90 86	1.25	"
Mohawk Vly. Mls.	63	2.00	68x68	"	99 98	1.12	"
"	38	2.12	62x66	"	100 100	1.00	"
"	72	1.98	62x62	Niobe, R	36	4.52	"
"	81	1.70	"	Nonparel	36	5.28	52x56

Unbleached Muslins and Sheetings.—Continued.

NAME	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN	TO	TO		IN	TO	TO
	INCHES	POUND	INCH		INCHES	POUND	INCH
Oela, XX	28		40x40	Portsmouth, B	31	9.41	48x48
Oriental Bunting, A	36	10.28	36x32	Prescott, L	36	4.50	64x64
“ “	36	10.52		Pride of the Nation	36	3.85	84x84
Ozark AA	36	2.79	48x52	Prairie Bunting A	36	8.63	44x36
Pacific, Extra	36	2.85	50x50	Princeton, 491	36	3.93	56x60
“ H	36	3.15	56x56	Rexford St'nd'd AA	36	2.76	48x44
“	54	4.22	68x68	Rchmnd Co Mls. BD	36	4.69	48x52
“	63	1.87	68x72	Riverside Mls. XX	36	5.36	52x48
“	72	1.62	66x72	Rosalie F	36	2.96	48x48
Pacolet Mfg.Co.	36	4.07	56x60	Royal Standard	36	2.90	52x52
Pacolet, LL	36	4.00		Royal Standard	35	3.60	48x48
Palatka Bunting,	35½	8.72	56x62	Salsbury E	39	3.40	64x64
Park. A	33	4.32	42x50	“ R	36	3.72	64x64
Pembroke	45	2.15	60x68	“ O	33	4.05	64x64
“	63		60x68	“ N	30	4.40	64x64
“	72	2.15	“	Saracen	36	4.38	54x60
Pembrokee	81	1.85	“	Saranac A	36	4.83	52x25
“	90	1.62	“	“ E	40	3.08	68x68
Pepperell, E	40	3.55	66x68	“ R	36	3.45	64x68
“ R	36	3.70	64x64	Scotia Mills O M	36½	4.72	48x48
“	63	2.36	“	Sea Shore Sh'tings	27½	2.73	40x32
“	72	2.10	“	Shawmut LL	36	4.00	52x52
“	81	1.79	“	“ XX	36	3.16	64x64
“	90	1.62	“	Sherman	30	5.09	46x40
“	66	1.57	“	Sibley B	40	2.56	
Pequa	90	1.51	“	Statue of liberty	36	3.97	60x68
Pequot, A	36	3.17	“	Stark AA	36	2.85	48x48
“	50	2.18	72x76	Superior W. E.	36	4.85	48x52
“	63	2.08	“	“ Sea Island	36	4.00	56x56
“	72	1.71	“	Sun Tissues W	37	9.00	48x50
“	81	1.45	“	Tit for Tat A1	36	4.15	56x60
“	90	1.33	“	Tremont CC	36	4.00	48x22
“	99	1.22	68x76	Utica C	36	4.19	48x44
Perkins, X	30	4.67	60x60	Utica Cotton Co	36	5.45	48x44
“ Y	33	4.31	64x64	Utica Steam Mills	39	3.15	68x84
“ Z	36	3.90	64x64	“ “ Non	40	2.94	92x96
Phoenix, AA	39	3.59	64x64	“ “ “	48	2.23	68x72
Pledmont	36	3.09	48x48	“ “ “	58	1.91	64x64
“	30		38x44	“ “ “	9-4	1.37	64x69
“	27	4.62	48x44	“ “ “	10-4	1.38	68x68
Plymouth, H	29½	4.96		“ “ “	11-4	1.15	68x68
Pocahontas, R	36	3.90	80x72	“ “ “	12-4	.98	64x68
“ E	40	3.65	80x72	Verona	36	3.77	88x84
Pocasset Canoe, E	40	3.10	64x64	Victoria R	36	3.58	64x64
Pocasset, C	36	3.63	64x64	“ AA	36	3.95	52x52
“ O	33		64x64	“ LL	36	3.95	52x56
Portsmouth, P	28	7.00	63x64	“ E	40		64x64

Unbleached Muslins and Sheetings.—Continued.

NAME	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN INCHES	TO POUND	TO INCH		in inches	TO POUND	TO inch
Volunteer L	36	5.42		Wamsutta	81	1.30	72x76
“ B	32	5.98		“	90	1.15	72x76
“ C	28	8.18		“	99	1.05	72x76
“ D	28	6.93		“	108	.96	72x76
Wachusett A	36	2.85	48x48	Washington A	36	3.59	52x60
“ B	30	3.42	48x48	Waterville	36	5.15	64x68
“	40	2.57	48x52	Whitfield, Fine	40	3.57	59x60
“	48	2.12	48x52	Windsor H	36	5.34	52x48
Wamsutta	59	1.80	72x76	Williamvill Sea Is.	36	3.90	80x80
“	72	1.45	72x76	Yardstick	36	3.52	60x60

BLEACHED MUSLINS AND SHEETINGS.

NAME	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN INCHES	TO POUND	TO INCH		in inches	TO POUND	TO inch
Allendale	6-4	2.55	64x90	BB muslin cambrc	36	5.90	100x80
“	7-4	2.35	64x60	Beaver Fall Mills	26	7.85	64x60
“	8-4	2.08	64x60	Berkely cambric	36	5.27	112x112
“	9-4	1.87	64x60	Berkely, No 60	36	5.58	88x82
“	10-4	1.53	64x60	“ No 150	36	5.27	120x107
“	11-4	1.50	64x60	“ No 180	36	7.32	120x128
Alexandria	36	3.73	80x80	“ Madapolam	36	4.30	102x100
“	42	3.29	72x72	Berkshire X	36	4.50	80x80
“	46	3.23	72x72	“ Hiwatha	36	5.39	56x60
Alpine Rose batist	36	4.50	194x96	Berkshire Lily	33	5.75	72x68
“ twilled	36	3.70	84x96	“ Peacock	31	6.20	60x60
Amory	36	3.70	88x88	“ Bugle	31	6.20	60x60
Androscoggin AA	36	3.98	88x88	“ XIX	27		56x60
“ L	36	4.17	80x76	Big Bonanza	30	5.18	62x60
“	42	3.64	72x64	Blackburn AA	36	4.80	68x72
“	46	3.37	“	Boott R	28	5.93	68x60
“	6-4	2.57	“	“ E	36	4.35	62x64
“	7-4	2.20	“	Cabot	36	4.65	80x76
“	8-4	1.92	“	Cabot	31	5.67	80x76
“	9-4	1.71	“	Canoe River	27	7.70	60x56
“	10-4	1.54	“	Champion	36	5.50	60x56
Art Cambric	36		100x92	Chapman X	36	4.31	72x64
Ashbyrne	36		84x88	Charter Oak	36	4.80	64x64
Aurora	36	3.80	88x82	Chesnut Hill	36	5.20	64x60
“ Cambric	36		100x100	Clinton A1	24	4.30	84x80
Ballardville	36	5.00	64x64	Commonwealth O	27	8.00	56x52
Barker	36	4.25	80x80	Conestoga Mills	10-4	1.11	60x48
Bay Mills	36	3.91	88x82	“ “	90		60x48

Bleached Muslins and Sheetings.—Continued.

NAME.	WIDTH YARDS COUNTS			NAME.	WIDTH YARDS COUNTS		
	IN INCHES	TO POUND	TO INCH		IN INCHES.	TO POUND.	TO INCH
Continental Mills	36	3.20	70x60	"	81	1.49	"
" H	48	2.62	64x68	"	90	1.12	"
" LN	36	4.00	88x88	"	90	1.42	72x64
" A	36	4.20	84x84	Gem of the Spindle	36		80x76
" half blchd	36		68x72	George Washington	XX		
Copper Fastened	35½	4.38	60x56		36	3.72	74x72
Cumberland	36		80x84	Gold Medal	36	4.27	"
Dauntless	36	5.85	60x60	"	32½	5.47	72x64
Davol Mill	36	3.75	48x88	Great Fls Mfg Co J	39¾	4.27	63x68
Defiance	36	3.90	82x90	" S Tiger	31	5.18	72x68
"	36	3.90	87x82	" M Dog	33	4.62	76x72
DeSoto Mills E	36	3.12	52x46	Great Republic	36	4.20	80x80
Dimnd Hill Cmbrc	36	7.05	87x80	Green G	36	5.00	64x64
Dwight Anchor Co	36	3.47	76x76	Grinnell fine	40	3.47	104x96
Dyerville A	36	4.00	80x76	"	45	3.21	100x100
Edward Harris	30	4.75	72x72	"	50	2.59	104x92
Ellerton WS	36	4.50	72x72	"	63	2.58	"
Exeter	36	4.20	72x68	"	72	2.04	"
"	30	5.00	72x67	"	99	1.52	"
F-PF Cambric	36		88x76	Hero	36	4.70	72x72
Fairfax	36¼	4.00	87x80	Highland Mills	36	4.70	76x98
Fairmount Q	36	5.00	64x64	Hillsdale Mfg Co	36	5.00	68x68
Farmer's Choice	36	5.00	"	Hills Semper Idem	36	4.24	80x80
Farwell Mill4	36	4.29	80x80	"	36	4.27	34x76
"	42	3.72	"	"	36	4.27	"
"	45	3.48	"	"	42	3.75	"
Fearless-of-all-Competition	36	4.45	72x72	"	45	3.44	"
Fidelity	36	4.20	82x80	HEP Fine Cambric	35½	5.75	84x72
First Bale	36	5.52	68x62	Homesville B	36	4.16	64x64
First Call	36	4.20	"	" H & E	36	4.85	72x86
Fitchville	36	4.50	72x72	" H & E	31	6.00	68x64
Forestdale	36	4.25	80x76	" WT	33	5.75	"
Forrest Mills	36	5.00	72x68	" XXX	36	4.50	72x68
"	36	4.77	"	Homespun	36	4.15	76x76
"	31	5.70	62x68	Hope	36	4.89	76x72
"	30	4.10	88x82	Howe	36	4.55	"
Fruit of the Loom	36	4.10	"	Ideal Q	36	5.29	60x40
"	31	4.22	"	Indian Head Shrunk	35		48x48
" (100s)	36	3.72	100x100	Indurstry	36		56x56
"	31	4.22	82x80	Jack Horner	30	5.72	64x64
"	42	3.62	"	Jacque Rose Com, Cambric			
"	50	2.90	87x72		36	5.40	84x84
"	45	3.07	89x72	Jacque Rose Cmbrc	36	5.49	"
"	48	2.77	"	J. C. Knight Cmbrc	33	4.80	
"	68	1.97	80x60	Jewett City Mills	48	3.55	76x84
" (extra)	72	1.70	"	Jumping Horse	36	4.75	68x64
				Just Out	27	6.15	60x64

Bleached Muslins and Sheetings.—Continued.

NAME	WIDTH YARDS COUNTS			NAME.	WIDTH YARDS COUNTS		
	IN INCHES	TO POUND	TO INCH		IN INCHES.	TO POUND.	TO INCH
King Phillip AP	36	3.70	84x84	Mohawk Vly Mls	81	1.77	68x60
“ CP	36	3.57	“	“	81	1.79	“
“ Cambric	36	5.75	96x104	“	90	1.52	72x60
Knights Cambric	33	7.00	84x80	“	99	1.27	64x62
Loconia Mills	46	2.25	64x64	Monabnock	72	2.11	68x51
“	50	2.70	“	“	72	2.15	“
“	63	“	“	“	81	2.87	“
“	72	2.09	“	“	90	1.62	“
“	81	1.89	“	“	99	2.52	“
“	90	1.55	“	People's Cry (The)	36	“	72x56
“ Good-Night Cambric	46	2.70	96x80	Pepperell E	40	3.55	66x68
Lafayette	36	5.00	64x64	“ R	36	3.70	64x64
Lancaster	90	1.90	64x52	“ O	33	4.00	“
Landseer	36	4.10	80x80	“ N	39	4.50	“
Langdon GB	36	3.87	92x82	“	45	2.90	“
“ “76”	36	3.80	88x82	“	48	“	“
“	42	“	“	“	63	2.50	“
Lily of the Valley h'f bl'd	36	4.25	76x68	“	72	2.10	“
Linwood	36	4.30	84x80	“	72	1.95	“
Little Chief C'ttons	36	4.71	80x62	“	81	1.79	“
Loch Lamond Cmbrs	36	5.27	76x68	“	90	1.70	“
Lockwood VVV	36	3.75	88x82	“	99	1.27	“
“	42	3.12	72x62	“	108	1.00	“
“	42	3.12	68x62	“ Mfg.Co.Ex-GH Twills	81	1.72	72x60
“	45	2.99	“	“	36	3.27	100x60
“	45	3.01	“	Pequa	90	1.51	64x64
“	50	2.57	“	Pequot A Heavy	36	3.20	68x62
“	72	1.89	“	“ B	40	2.80	64x64
“	81	1.77	“	“	45	2.59	72x76
“	90	1.55	“	“ W	43	2.32	68x76
Lonsdale	36	4.21	84x80	“	54	2.18	72x76
“	32	4.70	“	“	54	2.29	72x68
“ Cambric	36	“	104x06	“	63	2.07	72x76
“ Nameless Star 36½	4.27	80x72	“	“	63	1.89	72x62
Madapolam Cmbrs	36	4.40	108x100	“	72	1.71	72x76
Magic	26	8.29	53x40	“	72	1.63	72x73
Masonvill	36	4.02	84x82	“	81	1.45	72x76
“	36	3.97	“	“	81	1.49	72x72
Melrose Mill	36	3.90	84x88	“	90	1.33	72x76
Milton Falls	36	5.00	64x62	“	99	“	68x76
Mohawk	63	2.22	75x60	Perkins Z	36	3.90	64x64
Mohawk Vly. Mls	45	2.91	64x63	“ Y	33	4.31	“
“	54	2.57	“	“ X	30	4.67	60x69
“	63	2.21	72x60	Phoenix XX	39	3.59	62x62
“	72	1.87	“	Piedmont	36	3.09	48x48
				“	39	“	“

Bleached Muslins and Sheetings.—Continued.

NAME	WIDTH YARDS COUNTS			NAME.	WIDTH YARDS COUNTS		
	IN INCHES	TO POUND	TO INCH		IN INCHES	TO POUND	TO INCH
Piedmont	81	1.88	"	Pocahontas R	36	3.90	80x72
"	90	1.70	"	" E	40	3.10	64x94
"	108	1.10	"	" D	30		
Monohansett h'f b'ld 36	4.45	72x62		Pocasset Canoe E	40	3.10	64x64
" Mfg Co 36 3/4		"		Pocasset C	36	3.63	"
Nashau E	36	3.50	75x68	" O	33		"
" P	45	3.11	"	Portsmouth C	36		
" W	45	3.02	"	" B	31	9.41	48x48
Naumkeag Twill	72	1.50		" P	28	8.00	64x64
"	81	1.45		Prescott L	36	4.50	"
"	90	2.28		Pride-of-the-Nation	36	3.85	84x84
Netherwobd	36	4.20	76x80	Preston	36		
New Candidate	35 3/4	4.72	80x72	Princeton 401	36	3.90	56x60
New Bedford Sh't'ng 81				Quinnbaug Co	36	4.70	80x72
"	45			Rochdale (h'f b'ld)	36	4.90	68x68
"	48			Rosaland (As You Like It)	36		76x76
"	50			"	36	4.32	"
"	54			Second to None	36	5.22	68x60
"	63			Security	30	6.20	60x56
"	72	1.89	92x82	Senate Mills (h'f b'ld)	36	4.18	68x72
"	81	1.50	88x82	Signal A	32	3.77	64x64
New Jersey	36	.73	76x68	" B	27	6.12	"
Newmarket	36	4.55	68x62	Social O	36	4.75	80x76
New York Mls Ext 36	4.87	96x96		" L	36	5.10	72x73
" W't'r Tw'st 36		92x102		" W	36	5.97	68x64
"	45	2.61	68x56	Standard	36	4.15	88x84
"	54	2.07	"	Standish	36	4.25	80x76
"	72	1.50	72x76	Star W	36	5.20	64x64
"	81	1.22	"	Sun	36	3.57	80x68
"	90	1.20	60x48	Sunlight	27		56x60
"	90	1.20	72x68	Superior American	36		76x80
" 100	99	1.00	68x62	" Royal Bunting	36	8.97	42x40
No Dicker	31	4.75	72x68	Telegraph	30	6.00	60x52
Oak Grove	32	5.17	68x60	Ten Strike	36	4.50	72x68
Oak Lawn	36	5.17	72x62	Triumph	36	5.70	68x90
Our Choice	36	4.50	76x82	Tuscarora Mills	36	3.28	80x64
Our Own	30	5.72	62x62	"	36	3.28	"
Our Reliance	36	5.70	60x56	Universal	36	3.55	80x76
Paragon	36	4.50	72x68	Utica Cot Ex Hvy	36	3.00	68x64
Peabody Mills H	36	4.70	60x52	" Nonparel	36	3.20	92x96
Pelham Q	36	4.70	68x60	" Ex heavy	36	3.55	96x80
"	36	4.70	"	"	5-4	2.72	68x60
"	36	4.70	"	"	6-4	2.17	"
Pembroke	54	2.55	62x62	"	8-4	1.31	"
"	63	2.50	"	"	8-4	1.70	72x72
"	63		60x68	"		1.50	72x60
"	27	4.62	"	" Steam Mls	72		

Bleached Muslins and Sheetings.—Continued.

NAME.	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN	TO	TO		IN	TO	TO
	INCHES.	POUND.	INCH		INCHES	POUND	INCH
Utica	9-4	1.35	68x64	Wamsut Night Rbs	36	4.82	"
"	10-4	1.21	"	" d'bl warp	53¼	2.82	80x60
"	10-4	1.70	"	Warren Mfg. Co. linen fine			
"	100	1.14	"		36		
" Dmnd. U	36	3.47	72x72	Washington	36	5.00	64x64
Valley Mills O	32½	7.89	60x60	Wessacumcon B	36		
" O	25	6.80	52x44	" D	36	4.29	
Waltham XX(h'f bl'd)	36	3.50	72x60	Water Witch	36		
Wamsutta Mls O-XX	36	3.50	92x92	" "	36		
" ST	45	2.22	72x64	Wauregan 100's	36		100x100
"	50	2.28	88x88	" No 1	36	3.90	88x88
"	60	3.40		" Cambric	36		108x92
" Cambric	36		68x54	White Hall	36	4.75	72x80
" Cambric fine	36	6.15	100x96	White Horse	36	5.00	64x64
"	81	3.47	88x88	White Rock	36	4.10	88x80
"	45	3.09	72x72	Whiting	36		
" ST	54	1.98	"	Whitinsville Cotton Mills			
"	63	2.07	"	" " "	36	4.50	80x76
" Twilled	72	1.50	"	" " "	36	4.58	"
"	81	1.29		Williamsville A1	36	3.59	88x94
"	81	1.29	72x72	Winchester	36		
" Twilled	90	1.17		Winona	36	3.50	88x84
" ST	90	1.17	72x68	Winthrop AA	36		
"	99	1.08	"	" E	42	3.50	60x68
"	108			"	45	2.75	"
" Ex Hvy Jean	36	4.82	68x68	Woodbury	36	5.29	64x64
" Gold Medal	36	4.82	"	World Wide	36		
" " NB	36	3.25	"	Worth	36	4.80	72x60

TICKINGS.

NAME	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN	TO	TO		in	TO	TO
	INCHES	POUND	INCH		inches	POUND	inch
Amoskeag Mfg Co	32	1.97	52x80	Amoskeag Mfg. Co.			
"	"	31¼	2.00	" X	31@32	2.70	54x60
"	" ACA	36	2.85	" Awn'g sat'n	31	1.97	54x80
"	"	31½	1.94	" Garniture	32	2.01	
"	"	31½	2.03	Belgrade fcy rod	135 30	2.77	76x52
"	" A 30½@31	2.27		Berwick Mfg Co BA fancy			
"	" B	36	2.50	colored	30	5.82	84x64
" crimpd	30@31	2.59	56x56	Brandywine Mills No 10			
"	" D	30@31	2.60	Conestoga Stm Mls	33	2.00	
"	" F	31	3.07	" Prem A	36	2.00	
"	" XX	32	1.87	56x68	" FF	33	2.00

TICKINGS.—Continued.

NAME.	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN	TO	TO		IN	TO	TO
	INCHES	POUND	INCH		INCHES	POUND	INCH
Conestoga Extra	36	2.25		First Prize D	30	2.68	52x84
“ “	32	2.50		“ E	30	2.90	48x84
“ Gold Mdl	36	2.20		Ocean	27	4.83	64x36
“ CT	39	2.42		Old Clock Tick C	30	2.83	76x52
“ CCA	31½	2.58		“ (I)C	30	2.98	“
“ AA	29	3.40		“ G	31½	2.08	“
“ fncy red RR	33	2.00	32x60	“ C	30	2.54	“
Cordis, ACE	32	2.07		“ G	31½	1.97	
“ No. 1	32	2.07		“ K	28½	4.68	60x40
“ No. 2	32	2.22		“ R	30	3.59	72x42
“ No. 3	30	2.50		Omega mdl sup ext	36¼	2.38	72x76
“ WS	29	4.00	60x74	“ superior	42	2.37	“
Challenge fancy	30	3.82	36x74	“ fncy RD	31	2.16	58x88
“ “		3.71	“	Randolph Mls blue	29½	3.51	60x36
Endurance, fancy	32	2.77	44x96	Rosemont Mills RLT fancy			
Everett plaid PT	30	2.40			31½	3.34	72x36
Farmer's		2.88	36x80	“ XXX	32	3.09	104x40
Hamilton Mfg Co	30½	2.42	56x56	Tiger Mills No 1	33	2.05	
“ BT	30	2.54	“	“ No 1	32½	1.97	76x56
“ D	30	2.50	68x48	“ No 2	31		84x60
“ N	31¼	3.48	64x44	“ No 3	31	2.60	84x52
“ B	30½	2.95	64x48	“ No 3	31	2.71	72x52
Horse Head	30½	3.45	72x44	“ XXX twls	33	2.10	56x56
Jewett City	30	3.92	76x40	“ XXXX	33	1.70	72x76
Lenox, fancy	32	2.16	64x48	“ fancy		2.05	60x68
“	32	3.84	36x84	Swift River	30	3.79	76x40
“	30	3.71	“	Triumph Mfg Co	30	3.01	36x96
First Prize B	30	2.93		York AA	32	2.15	
“ C	30	2.83	52x88	“ T	30	2.40	

COTTON DRILLS.

NAME	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN	TO	TO		IN	TO	TO
	INCHES	POUND	INCH		INCHES	POUND	INCH
Boott Standard	30	2.85	76x88	Pepperell ble'ch'd	27	3.28	80x48
Clifton K	30	2.87	76x52	“ dragon	27¼	3.36	80x48
Darlington Mills	28¾	2.87	76x52	Plymouth stan'd	29½	2.89	
Eureka	29¼	2.77	72x48	“ 300	29½	2.96	
J P King Mfg Co	30	2.93	68x48	Prescott, blue D	30	3.25	72x68
London Mills XX	30	3.52	64x38	Royal stan'd bro.	29	2.72	64x68
Masschus'ts stan'd	30	2.85		“ 250X	30	2.49	68x56
“ DN	27	3.05		“ bleach'd	28	3.11	76x48
“ G	30	2.80		Stark HD brown	27	2.42	66x52
Normandie stan'd	29	2.73	70x52	Stark A imprv'd	30		
Pacolet Mfg Co	29½	2.87	68x22	“ A, bleached	28		76x52
Pepperell brown	29	2.84	72x52	Suffolk, stan'd D	30	2.85	

COTTON CHEVIOTS.

NAME.	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN	TO	TO		IN	TO	TO
	INCHES.	POUND.	INCH		INCHES	POUND	INCH
Amoskeag stripes	27½	3.55		Iadna Mills	26	4.84	
“ checks	27½	3.32		Philadelphia	26	4.51	
Alabama stripes	26	4.51		Pioneer plaids	28	4.36	40x44
Algeron plaids	27	4.36	48x33	Prodigy stripes	29½	3.85	
Crown A stripes	26	4.89		Rosedale	27	5.42	
“ plaids	28	4.16		Slater	27	3.42	
Conestoga stripes	28	2.69		Santa Rosa	27¼	4.45	
Falmouth ch'ks BB	27	4.52		Real Caledonia jck	28	4.30	
Forrest Hill	28	4.18	36x40	Uncasville	27	2.37	
Great Republic	25½	4.26		Uncasville	27	2.37	

DOMESTIC GINGHAMS.

NAME	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN	TO	TO		IN	TO	TO
	INCHES	POUND	INCH		INCHES	POUND	INCH
Amoskeag Mfg Co	26½	6.40	72x76	Johnson Mfg Co	26	6.50	56x68
“ Staples	26½	5.60	68x76	“ Pin Checks	26	6.50	“
“ fcy stpls	26½	5.56	“	“ Plaid	26	5.90	64x64
“ Canton	26	6.92	56x60	Loraine Knotted	29	5.40	76x80
“ “ chks	26½	6.40	“	“ Manchester	27	6.00	44x50
“ Chln clth	26	7.64	48x72	Monogram	26¾	6.50	48x56
“ Persian	26½	6.60	48x56	Nevelle Seersucker	26		52x68
“ Zanzibar	25¾	5.58	60x76	Parkhill Mfg. Co. Toil Du			
Arasapha Mfg Co	29	6.44	36x40	Nord.	25½	6.70	60x70
Bay State	25¼	8.34	“	Pontiac Seersucker	25	7.58	40x56
Caledonia	26¼	6.68	48x56	Randelman			40x44
Elberon Seersucker	25½	6.78	40x56	Renfrew, Dress	26	6.34	60x60
Everett Classics	26	5.68	50x70	“ Novelties		5.86	52x56
Franklin Suitings	26¾	6.89	44x70	Tacoma Cloth	25¾	7.30	48x56
Glenarie	25½	6.40	40x48	Woodboro Mfg Co	27	7.08	“
Gotham	26¾	5.91	44x56	York Mfg Co stpls	27	5.33	52x56

BROWN COTTON FLANNELS.

NAME	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN	TO	TO		IN	TO	TO
	INCHES	POUND	INCH		INCHES	POUND	INCH
Ellerton HHH	35½	1.44		Ellerton R	28	3.10	
“ WH	35	1.78		“ S	28	3.37	
“ H	31	1.95		“ T	28	3.46	
“ WN	35	2.08		“ V	27¾	3.98	
“ N	32	5.15		“ CL	30¼	4.33	
“ O	28½	2.58		“ CM	28	4.80	
“ P	27½	2.84		“ CN	27	7.10	
“ Q	28	2.91		Glendale NN	26	4.88	

BROWN COTTON FLANNELS.—Continued

NAME	WIDTH YARDS COUNTS			NAME	WIDTH YARDS COUNTS		
	IN	TO	TO		IN	TO	TO
	INCHES	POUND	INCH		INCHES	POUND	INCH
Buckskin RR	26	5.00		"	T	"	3.34
Good Luck 4	57½	4.74	84x48	"	A	"	3.00
" 5		5.67		"	Y	29¾	2.70
" 6	28	2.90		"	Z	28½	2.70
" 14	28¾	3.49	76x52	"	X	31	2.50
" 18	29½	2.58	76x48	"	XX	30½	2.30
" 24	27	2.46		"	XXX	32½	2.00
" 30		3.43		"	XXXX	36	"
Massachusetts R	28	4.00		"	F	27	5.00
Royal St'nd'rd No.3	28	4.86	80x56	"	U	26¾	4.50
" " 5	"	4.63		"	L	"	4.00
" " 10	"	3.99	84x56	"	B	"	3.75
" " 20	"	3.41	84x64	"	N	28	3.40
" " 30	"	3.34	37x48	"	O	"	3.00
" " 40	"	3.67	84x48	"	E	59	2.75
" " 45	"	2.83	"	"	Z	"	3.60
" " 45	"	3.34	"	"	W	"	2.35
" " 50	"	2.70	"	"	V	"	2.30
" " 90	35½	1.79	64x44	"	G	30¾	2.00
" " 100	36	1.46	"	"	RX	31¾	1-75
Tremont M	28	5.30		"	R	31½	1.60
" DL	"	6.00		"	G—GG	36	1.50
" D	"	4.60		Saco colored plush	30	2.73	52x92
" H	"	4.00		Syracuse colrd plush	28	3.64	24x72
" P	"	3.60					

BLEACHED COT

NELS.

NAME.	WIDTH YARDS COUNTS				WIDTH YARDS COUNTS		
	IN	TO	TO		IN	TO	TO
	INCHES	POUND	INCH		INCHES	POUND	INCH
Ellerton HHH	32	1.64					
" WH	32	2.30					
" WN	32	2.2					
" N	20	2					
" O	28½						
" P	28						
" Q	26						
" S	28						

CO

NA

New Y

War
Yc

INTERESTING FACTS ABOUT DRY GOODS.

A Pound of Cotton.

Various estimates are given regarding the cost of raising a pound of cotton. These vary from 5@6 c., 7@7½ c. to 8@10 c. per pound, and in nearly every instance are based on the major portion of the supplies being bought elsewhere and not raised on the plantation. When supplies are produced on the farm, with cotton under good management, the cost of raising it will not exceed 6 cents per pound. A manufacturing concern some years ago produced the finest, that is, the thinnest, cotton yarn ever seen—700s—of which muslin was made. The same firm has produced since, yarn of 2150, which is much finer than that of the famous Dacca muslin. A pound of the finest Sea Island cotton spun of this fineness would be 1000 miles in length. Some idea of the tenuity of cotton fibres may be formed when it is remembered that 14,000 to 20,000 individual filaments of American cotton only weigh one grain, so that there are about 140,000,000 to every pound, and each hair weighs only about the 1-17000 part of a grain, and if the separate fibres were placed end to end in a straight line, one pound would reach 2200 miles.

Twines and Strings.

There are about \$8,000,000 worth of flax and hemp strings made in this country every year, not the big sorts, such as lines, ropes, cables and hawsers, but just such strings as are lumped together under the broad name of twines. Besides these, there are large quantities of cotton strings made, and here and there still a few paper ones, though the latter—invented when cotton was high priced in the North during the war, and then quite common—are now seldom seen. There are but 8 twine factories in the United States: 2 in New Jersey, 3 in northern New York, 2 in Massachusetts and 1 (the largest) in New York city. The latter employs 800 hands, and turns out 14,000 pounds per day of finished twines and shoe tread, ranging in value from 14 cents to \$1.50 per pound. In addition to these eight factories, there are scattered through the Eastern states a few small establishments, but there are none, large or small, in the West or South.

Angora Cashmere.

This name is employed by the trade to denote a certain kind of cloth made in imitation of Camel's-hair cloth, which is said to be made of the long, white hair of the Angora goat of Asiatic Turkey, which rivals that of Cashmere. Angora Cloth is twilled like Cashmere, is of a light quality and the widths run 27, 48 and 54 inches.

Hindoo Silks.

Mysore silks are fine, soft, undressed silk stuffs, both plain and printed, dyed and undyed. They may be had in all colors, of a Hindoo character, the designs being chiefly a close running all-over of floral ones, although some printed in gold or silver are a little bolder in pattern, and others are printed black and in the natural color of silk. Nagpore silks are all soft, slight and undressed, and are to be had in every variety of essentially Hindoo colors. In fact, they belong to that class of Hindoo silk very properly called the "cultivated."

Ancient Tapestries.

The collection of tapestries in the Royal Palace of Spain is composed of more than 600 pieces, and is considered the richest in existence, especially for its fine Flemish tapestries of the 15th and 16th centuries. It has only been known to the artistic world of late years. Among the most beautiful are the history of the Virgin; the history of John the Baptist, the Apocalypse; the Battle of the Vices and Virtues; and belonging to a more modern period a hanging representing the victories of the Emperor Charles V, at Tunis; the Loves of Vertumnus and Pomona; the Labors of Hercules; the Spheres, etc. [See TAPESTRY.]

Metal Buttons.

Gilt buttons are made of a mixture of copper, with a small portion of zinc or brass mixed with copper, common brass being unfit for gilding. The buttons are cut out of large wide sheets of this metal, and the shanks are affixed by solder. The gilding is performed by means of an amalgam of quicksilver and gold. BRASS BUTTONS are simply stamped out of sheet brass, and the ornaments are struck by a die. PLATED BUTTONS are made out of copper, plated with silver, and are chiefly used in liveries and uniforms. The figures or devices upon them are formed by stamping with dies. The commonest kind of metal buttons are those which are stamped in pewter, and chiefly used in the trim-
 military jackets. They are very soft, but not being intended
 to exhibit the number of the regiment, or
 the cloth, they answer the

The Origin of Various Manufactures.

According to Melik Cassam Mirza, of Tebriz, Persia, the manufacture of silk was first practiced in China, in the province of Kiang Nau, about the year of the world 1743, or 2257 years B. C. From other authentic sources we learn that cotton had its origin in India, and that shawls and carpets were first made in Persia.

Barcelona Silk Kerchiefs.

Barcelona silk kerchiefs are named from Barcelona, in Spain, from whence they were originally brought, though now all made in England; they are of four kinds; black, of plain colors, Turban checks and fancy. The black are more for use than for show, and measure from twenty-six inches square to seven-quarters. The Turban checks were originally made for head-dresses, and are about twenty inches square.

Materials Used In "Woolen" Manufacture.

The fibers used in woolen and worsted manufacture are divisible into three great classes: "First, the animal class of which wool, silk, alpaca and mohair are standard representatives; second, the vegetable class, in which cotton is the principle, Jute and China grass having only been applied to the woolen industries, to a very limited degree; while flax and hemp, as yet, have found no place in wool fabrics, being used mainly in the production of carpets and bagging; and third, the artificial or re-manufactured class, which includes noils, mungo, shoddy, extract and flocks. The latter class, however, forms a prominent factor in the manufacture of so-called woolen and worsted fabrics."

Cotton in the South.

It is predicted that should the rate of cotton production in the South from 1879 to 1889 be kept up until 1898, we shall see a production of 95,607,000 bales in ten years, worth at an average of \$50 per bale, \$4,755,350,00, or a yearly income to the South of \$477,500,000. The plain facts point to this as certainly as we live and our country is kept at peace with itself. It is estimated that the cotton crop of the South for the year 1889 was worth anywhere from \$325,000,000 to \$350,000,000, while the 7,000,0000 bales produced in 1890 are valued at \$380,000,000. Besides this, in Southern states there will be manufactured into goods in the ten years some 8,000,000 bales of cotton, which means \$125 to the bale put in goods, or a thousand millions in cotton goods in the period, or a hundred millions a year. New and improved methods of cultivation, better farm implements and tools, greater economy in farm work, coupled with an ever increasing demand for cotton fabrics, are all tending to the fulfillment of this prediction.

Smyrna Rugs.

It is perhaps not generally known that the bulk of so-called Smyrna carpets (which, however, are manufactured at Smyrna in small quantities only) come to England and America. Within the past few years the demand in the United States has greatly increased for this class of floor covering. The seat of the manufacture is in the remoter part of Asia Minor, and Smyrna serves as the medium of transport only. The goods are shipped to this point by the native weavers, where they meet with English and American purchasers. The favorite kinds, which are thick and warm, come from Ushak, Giordes, Kula, Demirdschik, Melas, Ladik, Pergamos and Sparta; Ushak, with 20,000 inhabitants, being the chief seat of the industry. Kula and Giordes have about 15,000 inhabitants each, whereas in the towns, with the exception of Pergamos and Ladik, the manufacture is of more recent introduction, and has not reached the same extent. The thickest and most valuable carpets come from Ushak; the poorest sort are the "Barbadoes," in which the colors cannot be guaranteed. The finest quality of all is known to dealers by the name of "Tek Iplik Carpets," which are extremely beautiful both as regards their texture and designs. Vegetable dyes are used for the most part. Now and then of late years, the trade has been surprised to learn that the colors in some of these Smyrna rugs were not fast, especially as these Oriental fabrics had from time immemorial been regarded as models of the weaver's handicraft and the dyer's skill. It has been stated that the deterioration of color in these rugs and carpets is due to recent inroads of French and German dye-makers, and the use of their aniline dyes, which are conceded on all sides to be vastly inferior to the vegetable dye-matters. The following are the market values of the most important varieties of Smyrna rugs: Ispahan from \$25 to \$200; Sane \$50@180; Bokhara \$14@45; Ladik \$40@85; Yeordis \$75@250; Mecca \$25@85; Shiraz \$30@120; Teheran \$60@\$300; Coniah \$30@75; Soumak \$25@75; Kazark \$22@75; Melas \$5@50; Tiflis \$10@40; Daghestan \$8@65; Afghan \$20@110; Anatolian \$8@55. In size these range from two-foot square, to the size of an ordinary sitting room; in weight from five to one hundred and fifty pounds. So close and thick are they woven as to be absolutely impervious to both air and water. If the genuine vegetable dyes are used the colors grow softer and more beautiful with age. As regards the wearing qualities, like all hand-woven fabrics, they are far superior to the power-loom product, and it may truly be said that Smyrna rugs will outlast any and all other varieties of woven fabric in the world.

"Spick, Span New."

This phrase was first applied to the cloth just taken off the *spannaus* (stretchers) and *spikes* (hooks.)

Cotton in India and the United States.

The writers of the Middle Ages, in describing the progress of commerce, or the spoil of captured cities, or of the garments of both sexes, continually mention stuffs of woolen, linen, silk and gold in all their varieties, but do not speak of cotton. The reason that cotton was unknown to Europe at this time was on account of their non-intercourse with the people of India. Since the fifth century before Christ India throughout her wide domain has clothed herself exclusively in cotton. She possesses the soil, the climate and all the requisite elements from nature for the production of cotton to an almost boundless extent, sufficient in fact to supply the entire world with the raw product. This was not known in Europe until comparatively recent times—the year 1641. Since that time England especially has interested herself in the development of India's cotton industry. In 1890 there 107 cotton mills at work in India, containing 20,000 looms and 2,500,000 spindles, employing 85,000 operatives. Of these 42,415 were men 17,000 women, 15,000 young persons and 9,000 children. Of these mills 50 are in the town and on the island of Bombay. Cotton manufacturing in India is what may be termed an infant industry, although owing to the cheapness of labor in the country, and to her close proximity to the great markets of the East, and the fostering care of Great Britain, India may in the near future become a very formidable competitor with the United States in the production of cotton fabrics.

Loss of Length in Twisting Cotton Yarn.

Yarn must always lose a little length in twisting, the loss being proportionate to the thickness of the yarn, and the hardness of the twist. If two bobbins of the same counts are twisted together, the count will, of course, become half of what it was before, just as the weight will be double. In bleaching, cotton also loses a portion of its weight, because the bleaching process is, in all cases, subtractive. It loses much resinous and coloring matter, often amounting from 10 to 12 per cent. But in dyeing etc, on the contrary, it acquires a portion of the drugs used, because this process is additive; and as much as 10 to 15 per cent may be added to the weight of the raw yarn, by its passage through the various coloring processes.

Sizing of Cotton.

Cotton is never woven in its natural state. It always receives a dressing or coating of some kind of liquid "size," which is allowed to dry on the yarn before the weaving begins. The object is to diminish the roughness on the surface of the threads, and to increase their tension power, thereby facilitating the weaving.

Yarns Under the Microscope.

If you take a cotton yarn, say No. 40, and examine it under a microscope, you will find that it resembles a solid cane, with a slightly undulated surface, and here and there a few straggling filaments on its surface. A "woolen" yarn, of the same size, viewed in a similar manner, resembles one continuous mesh of entangled fibres, tightly clustered together, especially in the heart of the thread. A "worsted" yarn of the same size, submitted to a like test appears comparatively more regular in construction than the "woolen," the multiplicity of the fibres not being so large nor so completely twined around each other. In the silk yarn, the individual fibres are so firmly grouped together that it scarcely seems to be composed of a material of a fibrous character.

The textile fibers, cotton, wool, silk, flax and hemp differ considerably from each other in their structure. The first three consist of definite and entire filaments not divisible without decomposition; the last two consist of fibrils bundled together in parallel directions which are easier separated into much more minute filaments. These bundles are bound together by parenchymatous rings, from which they are freed by operations of hecking, spinning and bleaching. The downy filaments are cylindered tubes, growing in that state, but get more or less flattened in the maturation and dying of the wool. They are shut off at both ends, and their flattened diameters vary from 1-500 to 1-1000 of an inch, according to the quality. The filaments of wool, when seen through a powerful microscope, have somewhat the appearance of a shale, with the edges of its scales turned out a little from the surface so as to make the profile line of the sides like a fine saw, with the teeth sloping in the direction from the roots to the point. Each fibre of wool seems to consist of serrated rings imbricated over each other like joints. The teeth differ in size and prominence in different wools, as well as the annular spaces between them, the latter being in general from 1-2000 to 1-3000 of an inch, while the diameter of a filament itself may vary from 1-1000 to 1-1400. The cocoon-silk threads are twin tubes laid parallel in the act of spinning and glued with more or less uniformity together by the varnish which covers their whole surface. Each filament of this thread varies in diameter from 1-800 to 1-2500 of an inch, the average breadth being 1-1000, but it is variable in different silks.

Ingrain.

Ingrain is a term used in connection with textiles dyed before being woven. The advantage of such textiles is that they can be washed without thereby discharging their colors. The cotton cloth called Turkey red and the red marking cotton are what is called ingrain. There are also double and treble ply ingrain carpets.

Twine or Twist of Yarns.

All the yarns used for weaving purposes, whether made on woolen, worsted or cotton systems, providing the material employed in their manufacture is of a fibrous character, and has to be submitted to the process of spinning before it assumes the form of a weavable thread—may be divided into two great classes, namely, *openband* and *crossband* twists. The origin of this classification obtains in the twisting process. There are, as a simple experiment will show, two distinct methods of imparting twist to the attenuated sliver (long ribbon) of the condenser, or roving, of the roving machine. Suppose, for example, a number of wool fabrics, which had previously been reduced into a compact, thread-like condition, were about to be twisted together by hand; in order to accomplish this, one end of the thick fibrous threads might be held in a fixed position between the forefinger and thumb of the left hand, while the right could be engaged in imparting twist among the fibres, causing them to twine around each other from left to right, and forming, in so doing, what would be an *openband* thread.

To produce the opposite kind of twine or twist, called *crossband*, it would only be necessary to reverse the motion of the right hand, and thus cause the fibres during the imparting of twist into the sliver to revolve from right to left. In making this or similar experiment, the left hand corresponds to the wooden frame, which was, in Hargreaves' machine, substituted for the hands of the spinner, or to the giving-off rollers of the spinning frame in present use; for these grip the thick thread, while the spindles give the necessary twine the direction in which the latter revolve, like the motions of the right hand, determining the character of the twist of the spun thread.

Jute Manufacture.

Jute is the long, silky fibre of *Corchorus capsularis* and other annual species of the same genus, belonging to the order *Tiliaceæ*, natives of Asia. It has come recently very largely into use for woven goods and is the object of an immense trade. The jute plant comes chiefly from India where it grows rapidly, and calls for very little care in cultivation. The Hindoos make their gunny bags of jute cloth. The jute manufacture, which was hardly known in Europe till about 1840, is now largely carried to both in England and this country. As jute is cheap, spins well and looks glossy when woven, it has come greatly into favor, some of the mills working up as much as 1,000 bales of it every week. The main use of it is for sacking and bagging; other uses are for sheeting, mattings, ducks and carpeting and in combination with the more expensive fibres of cotton, wool, flax and cocoanut. Jute does not stand exposure to the weather, and hence is not suited for the manufacture of cordage.

How to Judge the Quality of Wool on a Sheep's Back.

The simplest method of judging of the quality of on a sheep's back. Take a lock from the sheep's back and place it upon an inch rule; if you can count from thirty to thirty-three of the spirals or folds in the space of an inch it equals in quality the finest Saxony wool grown. Of course, as the number of spirals to the inch diminishes, the quality of wool becomes relatively inferior. Cotswold wool, and some other inferior wools, do not measure more than nine spirals to the inch."

Furs for Hats.

The various materials most used in hat making, are the furs of the beaver, the otter, the rabbit, the hare, a species of muskrat, a species of the monkey, a species of the seal and a few others, together with Saxony and Spanish wools, and the hair of camels and goats. Numerous as are these various names, most of the animals produce five or six different qualities of stuff, from particular parts of the same skin, which vary greatly in price or value.

Looped Cord Fabrics.

The new fabrics made from spiral woven or looped cord, and which are now being offered to the trade are worthy the attention and consideration of those who are ever on the lookout for novelties in manufactured articles. The spiral or looped cord referred to, in its structure somewhat resembles chenille, the only difference being that the loops, which give the cord its peculiar rich and pleasing appearance are tied to a straight cord of cotton or worsted yarn in a manner which makes them immovable and lasting.

The looped cords can be made of any size desired, from $\frac{1}{8}$ to $\frac{1}{2}$ inch in diameter, and of any solid color or mixture of color or material desired, such as silk, worsted, linen, cotton, etc., also for fringes for any purpose.

As a material for blankets, bed covers, carriage and lap robes, steamer blankets and robes, shawls, etc., it is especially desirable and handsome. The loops of the ornamental cord, projecting as they do from the sides of the core yarn—to which they are tied—form, in the process of making, a plush-like texture when woven into fabrics.

The fabrics produced by this process are rich in appearance, soft, pliable, light in weight, yet warm, healthy and agreeable.

The product, when made with single looped cord, is alike in appearance on both sides, but if made with double cord the two sides can be, if desired, of different colors. The goods produced by this new process are reasonable in cost, and we predict, when generally known and shown to the trade, will at once become one of the most popular fabrics of the day.

Madapolams.

Madapolams are a coarse description of calico cloths, of stiff heavy make, originally of Hindoo manufacture, where they were employed for quilts. They are now made in England, dressed and undressed, and are used for underclothing. The cloth measures 29 to 33 inches in width. or in double width it is from $1\frac{1}{8}$ to 33 inches. The latter varieties are much employed for curtains, quilts, aprons, etc.

Hand Labor and Machinery.

The weaving industry of the United States offers perhaps as striking an illustration as any of the actual displacement of hand labor by machinery. With a hand-loom, a weaver used to weave from 60 to 80 picks per minute in weaving muslin of good quality, with twenty threads of warp to each one-quarter square inch. A power loom now weaves 180 picks per minute of the same kind of cloth. Even in power machinery a weaver formerly tended but one loom. Now, one weaver minds all the way from four to ten power looms, according to the grade of goods.

Construction of Stockinette Cloth.

Strictly speaking, stockinette is not a cloth; for it is not a *woven* fabric, but a *knitted* texture. By a process of knitting and not by weaving, the individual threads of which a stockinette fabric is composed, are interlaced into one regular texture. The work is performed in a kind of a frame or loom, in which the yarns are arranged in parallel order, at uniform distance apart, as in ordinary weaving. Of course, the machine is automatic in its movements and capable of producing a great length of cloth in a very short time. The fabric thus formed is ornamented with a fine ribbed pattern, similar in character to that seen in common knit goods. This article generally handles soft, full and elastic, but lacks those valuable characteristics of strength and firmness of texture or make, which obtain in a woven cloth proper. The difference between the structure of this fabric and that resulting from weaving warp and weft yarns together may be illustrated as follows: Take a sample of stockinette cloth and try to withdraw a thread and what is the result? The whole construction is unraveled. Next submit a loom product to a similar examination and it will be found that if a longitudinal or warp thread is removed the transverse or weft-threads will remain, while on the other hand if the latter are withdrawn the warp threads will, although the texture may be partly destroyed, still remain, to a certain extent, undisturbed. Again, the manner in which a knitted fabric is constructed limits the designer to one class of weave effects—these being of a stockinette character—whereas the principles of such weaving are of such a description as to admit of unlimited variation in design.

Muslin Mills.

The following number of mills are engaged directly and indirectly in the production of brown, bleached and colored cottons, print cloths and prints in the United States:

Mills making brown, bleached and colored cottons.....	150
Mills making brown and bleached cottons.....	125
Mills making colored cottons	250
Mills making print cloth	70
Mills making prints	15

The above if added together would make 610 establishments, but the number is not so large as that, for the reason that many mills make in varying quantity all the different classes of cottons described, while others are devoted exclusively to specific manufactures, such as brown and bleached sheetings and shirtings, or brown and colored cottons, or print cloths, or prints alone, and are necessarily contained within each respective classification. However, the above figures show one thing, that all of the various "regular" and "standard" tickets, as well as "fancy" brands of brown, bleached and colored woven cottons made in this country, are produced by these factories, and also that the names of the same have been so multiplied in number and variety within the past few years, that they now extend well into the thousands in number. While diversification of quality and style of our domestic cotton fabrics is steadily and rapidly enlarging, it is a question whether they will keep pace in this direction with the increase in the variety of the fancy names given to them. As an illustration, one make of brown, bleached or colored cottons that has a standard reputation will not only be made and branded with its own original and regular ticket, but to satisfy the caprice or necessities of the trade in various parts of the country, will have probably a dozen different fancy names that bear no relation what ever to either the original brand or the name of the factory making it. This is due to the keen and close competition on the part of both the jobbing and the retail trades, which reduces sometimes the profits of both to such a low ebb, that they cannot afford to carry the goods unless they have some protection in the way of fancy tickets that are not strictly competitive so far as the brand is concerned.

Satin Sheeting.

Satin sheeting is one of the "waste silk" materials, of satin make on the face and twilled cotton at the back, the chief substance of the material being cotton. It is made in different degrees of fineness, runs 54 inches in width, and is employed for upholstery, embroidery purposes, etc. Satin sheeting is thicker in substance, coarser in the weaving, and less glossy than the ordinary cotton backed satin.

Cost of Weaving.

While the cost of labor was higher in 1890 than in 1860, yet the expense of weaving has been reduced by the greater productive power of the machinery. The weaving of print-cloth 28 inches wide and 7 yards to the pound, is now less than 1 cent per yard. The cost of weaving muslins and sheetings 30 to 36 inches wide and weighing 3 to 4 yards to the pound is from $1\frac{1}{2}$ to 2 cents per yard. The cost of weaving the heavy muslin 36 inches wide, and the heavy drill 30 inches wide, each weighing from $2\frac{3}{4}$ to 3 yards to the pound is about $1\frac{1}{4}$ cents per yard. To weave the finest sheetings and muslins the cost is 2 to 3 cts per yard. This is the cost of mill labor in weaving these fabrics, including salaries, wages or earnings of every one employed, but does not include the cost of the raw material, nor the processes of bleaching, printing or dyeing.

Origin and Meaning of Hose.

Hose was originally a garment covering the legs and the waist, worn by men. The hose of the Middle Ages generally covered the person from the waist to the toes. They were secured to the upper garment by points or some similar device. At times the covering of one leg and side of the body was of different material and color from the other side. In the 16th century the leg coverings were divided into two parts, and the word hose was applied rather to the breeches, the covering of the lower part of the leg and foot being called the stocking or nether-stock. Hose in its present use, either singular or plural, denotes a covering for the feet and lower part of the legs, i. e., stockings. Short stockings, not reaching to the knee are distinctively called half hose, or socks, or very rarely ankle hose.

Eli Whitney.

Eli Whitney, the inventor of the cotton gin, died on Jan. 8, 1825, and was buried in the cemetery of New Haven, Conn. His tomb is after the model of Scipio's at Rome. It is simple and beautiful, and promises to endure for years. It bears the following inscription:

ELI WHITNEY,

THE INVENTOR OF THE COTTON GIN.

OF USEFUL SCIENCE AND ARTS, THE EFFICIENT PATRON

AND IMPROVER.

IN THE SOCIAL RELATIONS OF LIFE, A MODEL OF EXCELLENCE.

WHILE PRIVATE AFFECTION WEEPS AT HIS TOMB, HIS COUNTRY

HONORS HIS MEMORY.

BORN DECEMBER 8TH, 1765.—DIED JANUARY 8TH, 1825.

Turkey-red Dying Long A Secret.

The Levantines held for a long period the secret of the Turkey red process of dyeing, and had a monopoly of the trade in red-dyed cottons. When Felix visited Greece in the latter part of the 18th century, he found the principal Turkey-red dye works in Thessaly; others were spread on the flanks of the mountains of Ossa and Pelion. The waters of the Vale of Tempe were very suitable for dyeing, and there existed numerous small works, the principal of which were those of Ambelakia. Operatives from Smyrna, Salonica and Adrianople, first introduced the process into France, and up to the end of the last century they were at the head of the French dye works of the interior; but it was naturally difficult for a handful of foreigners to preserve their secrets for a length of time from the workmen employed, and in course of ten years from their introduction their methods of working were no longer dependent upon them.

Floss Silk.

Floss silk is the name given to the portions of ravelled silk broken off in the filature of the cocoons, which is carded like cotton or wool, and spun into a soft coarse yarn or thread, for making bands, shawls, socks and other common silk fabrics. The floss, or fleuret, as first obtained, must be steeped in water, and then subjected to pressure, in order to extract the gummy matter, which renders it too short for the spinning wheel. After being dried it is made still more pliant by working a little oil into it with the hands. It is now ready to be submitted to the carding-engine. It is spun upon the flax-wheel. Pretty fine fabrics of this material are now produced in Italy, France and England.

Rope.

A good hemp rope is hard but pliant, yellowish or greenish gray in color, with a certain silvery or pearly lustre. A dark or blackish color indicates that the hemp has suffered from fermentation in the process of curing, and brown spots show that the rope was spun while the fibres were damp, and is consequently weak and soft in those places. To insure greater strength and more safety in ropes used for scaffolding purposes they should be dipped when free from wet, into a bath containing twenty grains of sulphate of copper per litre of water, and kept in this solution some four days, afterward being dried. The rope will thus have absorbed a certain quantity of sulphate of copper, which will preserve them for some time both from the attacks animal parasites and from rot.

Mixed Fabrics.

Besides the various goods in cotton, flax, silk and wools, ingenuity is always at work in devising combinations in two or more of them, and these constitute mixed fabrics. The technical names vestings, coatings, tweeds, linings, cravatings, plaids, tabinets, poplins, paramattas, cashmerettes, cassinets, challis, bareges, cashmers and shall-cloths are only a few among those applied to mixed goods. It is almost like a sum in permutation to determine the number of ways in which a certain number of materials may be combined; and the manufacturers are ever on the lookout for new combinations. Besides the four well-known kinds of fibre above mentioned, there have been added three others to the list in recent times, alpaca and mohair for fine goods, and jute for coarse, insomuch that seven elements now enter into the permutation. Sometimes the warp, sometimes the weft, sometimes a nap or pile at the surface, is the point most attended to; in some cases yarns are dyed before weaving, in others the cloth is printed after the weaving; in some the Jacquard loom is employed to give a pattern to diversely colored threads.

Price of Beaver Skins in Early Days.

There was a time when beaver skins were bought from the natives by the Hudson's Bay Company, at the regular price of 14 skins for a gun, 7 for a pistol, 2 for a shirt or one pair of stockings, 1 for a comb or twelve needles, etc., less than the hundredth part of their real value, and all the other fur-bearing skins belonging to that country were rated by that of the beaver.

Spectacles.

Salvini de l'Aramate, a Florentine, invented spectacles about the close of the 12th century. He would have kept his secret to himself had it not been for Father Alexander de Spina, another subject of the same state, who, having found it out by his ingenuity, was too generous to withhold so useful a discovery from the world.

Selling Price of Thread.

The following table gives the range of sellings prices of spool cotton per dozen, for thirty years:

	SELLING PRICE.
1860.....	.40 to \$1 75
1865.....	.80 to 1 10
1870.....	.72 to 80
1875.....	.55 to 72
1880.....	.55
1885.....	.55
1890.....	.45

Glengarry Cap.

Glengarry, so named from Glengarry, a valley of Inverness-shire, Scotland, is a Scotch cap of wool, either woven in one piece or made of cloth. It has erect sides, a hollow or crease at the top, and diminishes in height toward the back, where the band is slit or parted and fitted with a pair of short ribbons, which are usually crossed and permitted to hang down.

Armure.

Armure is a silk textile, plain, striped, ribbed or with a small design. Sometimes it is made of wool and silk. There is also Satin Armure and Armure Bosphore, this latter being a reversible material. The widths run from 22 to 24 inches. *Armure* is a French term applied to either silk or wool, signifying a small pattern.

Drap Sanglier.

This is a loosely made all wool French stuff, 44 inches wide. It is of a rather coarse grain, plainly woven, and has a good deal of nap or roughness on the face. It is more especially designed for the purpose of mourning, and is found to be lighter in wear as a spring or summer dress material than its appearance promises.

Shoes of the Ancient Egyptians.

The shoes of the ancient Egyptians were formed of matting, the bark of the papyrus, leather and other materials. Shoes were also used by the Greeks and Romans, though they generally wore sandals, which were merely soles tied on the feet with thongs.

How the Turcomans make Felt.

The Turcomans are said to dwell, even to this day, in huts covered with felt, which they make by treading with their feet the raw material of which it is made while it lies upon the ground, thus favoring the supposition that felting was invented prior to weaving.

Common Gauze.

Common gauze is a variety of woven texture much used for light purposes. It is formed by the warp being twisted somewhat like a rope during the operation of weaving, by which the cloth acquires resemblance to lace. The texture of this gauze is always open, flimsy and transparent, but from the turning of the warp it possesses an uncommon degree of strength and tenacity in proportion to the quantity of materials which it contains. This quality, together with its transparency, fits it for ornamental purposes of various kinds, particularly for flower and figuring, either with the needle or in the loom.

Washing and Cleansing Fabrics.

To raise the crushed pile of plush or velvet, dampen on the wrong side with clean, cold water, then hold tight across the face of a hot iron, and rub up the crushed spot with a clean, stiff brush. The important thing in washing flannels is to have all the waters of the same temperature. If you begin with cold water, go through with cold; if with hot have all waters equally hot. They must not be allowed to freeze while drying, and it must be remembered that it is the potash and soda contained in the soap which tends to color the flannels yellow. [See BLEACHING OF WOOL.] The shrinking may also be partiall due to this agency, but above all to the exposure of the flannel while wet to the extremes of high and low temperatures. To clean and smooth up a wet silk hat, first shake off the water, rub the way the nap lies with a clean linen cloth or silk handkerchief, and hang some distance from the fire to dry; a few hours after, brush with a soft brush.

Planting and Picking Cotton.

The general method of planting cotton may be described as follows: The seed is sown on ridges, surrounded with furrows, for the purpose of draining off the superfluous water. Sowing time extends from the beginning of March to the end of April, the early part of the latter month being considered the most eligible, because of there being less danger to the young plants from the occurrence of frost—that fearful bane to the cotton planter. After the plants have attained moderate height they are thined out, so as to remove those that promise badly and to leave sufficient space between those that are vigorous; this space varies from ten to twenty inches. The soil is carefully weeded and they are still further thinned, if their luxuriant growth should require that process as the season advances. As the summer approaches, and when the frost has disappeared, the crop is liable to injury from heavy rains and the attacks of a caterpillar which feeds voraciously on the leaves of the plant. The blossom then appears, varying in color from yellow to red, and lastly brown.

The season of cotton picking commences in the latter part of July and continues, without intermission, to the Christmas holidays. The work is not heavy, but becomes tedious from the sameness. Each hand is supplied with a basket and bag. The basket is left at the head of the cotton row; the bag is suspended from the picker's neck by a strap, and is used to hold the cotton as it is taken from the boll. When the bag is full it is emptied into the basket, and this routine is continued throughout the day. Each hand picks from 250 to 300 pounds of seed cotton each day; however, some negroes of extraordinary ability go beyond this amount.

Flax in the United States and Europe.

From the earliest period the inhabitants of Ireland were acquainted with the valuable qualities possessed by the fibre of the flax plant, and manufactured it for clothing. By whom, however, or from what country it was introduced, there exists no satisfactory record. The Irish name for flax is *Lhin*, which word is also applied to thread, while the term *Anaírt* is used to express coarse linen cloth. One reason for the superiority of Irish linens over those of other countries is on account of the better bleaching they receive there. It is a well known fact that the linens bleached along the banks of the river Dan are whiter and softer than the products of other countries. Whether this is due to some chemical contained in the water of this river or to the heavy dews which fall on its banks, is not known with certainty, however, the snowy whiteness which is imparted to linen cloth by the water of this stream and the heavy dews which nightly fall, is unexcelled by the waters used for bleaching purposes in other countries. Vast quantities of yellow linens are annually shipped into Ireland from France, England, Russia, Germany and Belgium to be bleached and returned.

Flax men in Europe find a difference in the seed from Russia, Germany and America, and imported seed is usually better the second year. There are white, yellow and blue blossoming plants, and experiments have been made to prove which is the most desirable for the United States. There are reasons to suppose that the best American climate for flax is at least as far south as Virginia, Kentucky, Kansas, and California, from the fact that Egypt was the earliest seat of the industry, as well as the fact that flax must have originated in a climate where the frosts did not kill the land. The best flax region in Europe runs across France and Belgium. Silesia has the reputation of growing the very finest fibre at present. Russia produces the largest quantity of flax owing undoubtedly to the vastness of the country and the cheapness of labor engaged in gathering it. Ireland has for centuries been famous for her linen manufactures, but the extent of her territory is too small to raise all the flax required to supply the wants of her linen manufactures and consequently they are obliged to import large quantities from other countries. Flax being a very exhaustive crop, it is not grown to any extent in the South of Ireland, where the soil is richer. Some of the land there is very dear, and farmers prefer to raise crops that may bring them larger returns, and yet not impoverish their lands so much as flax would. A deep rich loam or alluvial soil is the best adapted for flax culture. The proper soil should be secured by a surplus of manure applied to a previous crop, say of potatoes, as fresh manures are injurious to it. Flax is sown broadcast on well prepared soil, at the rate of from sixteen to thirty quarts when wanted for seed, and two bushels to the acre when cultivated for the fibre.

Old and New Mills.

The erection of a modern cotton mill or woolen factory is on a far more comprehensive scale than in the early days of manufacturing. The new factories, covering large areas and constructed on the principle of good light, temperature and ventilation, are as widely different from the old style as the modern residence is from the homely cabin of the frontiersman. The old mills were almost wholly of a narrow type, while many of the textile establishments now erected vary from 100 to 125 feet in width, being necessary in many cases for the high stories characteristic of the present building age. Perhaps the most notable difference in the modern mill structure, is the unusual facilities for natural light. Light from combustion is comparatively poor and costly. In many of the weaving departments of mills built years ago and poorly windowed, the constant use of gas or oil for lighting purposes so overheats the air that the ordinary operator loses physical vigor. In a wide mill, with high stories, the windows must necessarily be large in order to secure good natural light, occupying at least 40 per cent of the side walls, and leaving but little width of the brick work between them. Added to the advantage obtained by high walls, mills nowadays are especially designed with the purpose of securing good sanitary conditions, entire mills being heated by means of a fan, which sucks in fresh air that, passing through steam pipes, is blown through flues and distributed in all parts of the building. This system from a health standpoint is far superior to the old methods.

Art of Meshing Machine Lace.

Felkin, in his "History of Machine Wrought Hosiery and Lace Manufacture," in speaking of the art of meshing machine lace, says: "This is a science of no small importance which has been investigated and in some considerable degree acquired by everyone who has made any important advances in the manufacture of lace whether in the construction of machinery or its application and use in the production of almost endless varieties of ground work and designs. It has been the study of lace patentees, from Morris in 1780, down to the present time. It consists in a careful examination and study of the different classes of *pillow* lace; ascertaining the number of threads used and their several courses in the formation of every kind of mesh; the number and order of twists, plaits, weavings and crosses, which are formed with each pair of threads; the fine-works, open-works, thick threads, points and pearls, which go to make up the texture of each class—Mechlin, Brussels, Alencon, Valenciennes, Lisle or Honeton. This information is necessary to be gained in order to be fully aware what is to be done by the machine, so that imitations, more or less perfect of any of these, may be obtained from it."

The First Patent for Silk-Twisting Engine Made in England.

This patent was dated September 9, 1718, and granted to Thomas Lombe. It sets forth that "Thomas Lombe, of Our City of London, merchant, has by his petition humbly presented unto us, shown and set forth that he has by long studies, pains and travels at great expense found out and brought to perfection three sorts of engines never before made or used within this our Kingdom of Great Britian, one to wind the finest raw silk, another to spin and the other to twist the finest Italian raw silk into organzine in great perfection which was never before done in this our Kingdom, by which means many thousand families of our subjects may be constantly employed in Great Britian, be furnished with silks of all sorts of the manufacture of our subjects, and great quantities exported into foreign ports by being made as good and cheap as any foreign silk can be." Therefore, His Majesty granted to Thomas Lombe, for the space of fourteen years, the exclusive right to operate such machinery and to manufacture silken fabric by means thereof.

How to Show Goods.

In your first minute with a customer you give her an impression, not of yourself but of the house which is liable to determine whether she buys of you or not, and also whether she becomes a customer of the house or a talker against it. If you are indifferent she will detect it before you see her, and the first impression is made before you have uttered a word. At the outset you have to guess what grade of goods she wants, high priced or low priced. Guess low enough; if you do not guess low enough be quick to discover your error and right yourself instantly. It is impertinent to insist on showing goods not wanted; it is delicately polite to get to exactly what is wanted adroitly and on the slightest hint. Do not try to change a buyer's choice except to this extent; always use your knowledge of goods to her advantage if she wavers or indicates a desire for your advice. What we want sold is the precise article which she wants to buy. The worst blunder you can make—the most offensive to her and injurious to us—is to intimate in supercilious manner that we do not keep as low a grade of goods as she asks for. Show goods freely to all customers; be painstaking to match samples; be as serviceable as you can be to all, whether buyers or not. In speaking of goods use correct names; say what they are made of, if you have occasion; if you do not know and cannot find out, say so. Sell nothing on a misunderstanding if you know it exists; make no promises that you have any doubt about the fulfillment of; and having made a promise, do more than your own share toward its fulfillment; see that the next after you does his share, if you can. As you sell goods, cut off and lay them together till you have finished. Offer the buyer a parcels check, and if there be occasion explain its use.

An Important Legal Decision.

The Court of Appeals has rendered an important decision touching the business relations of husband and wife. The case at issue was a limited partnership between a man and his wife, the latter being a special partner and contributing \$25,000 to the common fund. An action being brought against the firm for debt the question arose whether she was liable. Of the seven judges of court three held that a married woman might engage in business for herself, or form a partnership with any one else but her husband, but that she cannot legally enter into partnership with her husband, and that although they agree to become partners and incur liabilities she is not liable to the creditors. Four of the judges, however, per contra, held that a married woman is as free to enter into a business partnership with her husband as with any one, and that if she does so, and the firm incurs liabilities, she has all the responsibility of a partner, and is liable to the creditors for the debts of the firm. For the present, therefore, this decision holds good as the law of the State of New York.

One secret in Dyeing.

Some years ago an English manufacturer of carmine, who was aware of the superiority of the French color, went to Lyons for the purpose of improving his process, and bargained with the most celebrated manufacturer in that city for the acquisition of his secret, for which he was to pay \$5,000. He was shown all of the process, and saw a most beautiful color produced; but he found not the least difference in the French mode of fabrication and that which had been constantly adopted by himself. He appealed to his instructor and insisted that he must have kept something concealed. The man assured him he had not, and invited him to inspect the process a second time. He minutely examined the water and the materials, which were in every respect similar to his own, and then, very much surprised, said: "I have lost both my labor and my money, for the air of England does not permit us to make good carmine."

"Stay," said the Frenchman, "don't deceive yourself; what kind of weather is it now?"

"A bright, sunny day," replied the Englishman.

"And such are the days," said the Frenchman, "on which I make my color; were I to attempt to manufacture it on a dark cloudy day, my results would be the same as yours. Let me advise you, my friend, only to make your carmine on bright, sunny days."

The moral of this will apply quite as well to the making of many other colors used in manufactures and also in the fine arts, for it illustrates, in a practical way, the chemical influence of light upon certain coloring compounds or mixtures.

Cost of Cotton in a Yard of Print Cloth.

From a New Hampshire print cloth manufacturing firm, which was established away back in the forties and which produces 64x64 cloths in grey, using warp No. 30 and filling No. 38, we have the following statement of the cost of the cotton necessary to make a yard of 64x64 print cloth:

YEAR,	COST CENTS.
1855.....	01.98
1860.....	02.35
1865.....	07.71
1870.....	04.31
1875.....	03.14
1880.....	01.96

Wool and Worsted.

There are two great classes of manufacturers in this country, employed in working into a variety of fabrics, both wool and worsted. While both are the same raw materials, i. e., the fibre from sheep, still they are in many respects unlike each other. Wherein lies the difference? wool, in its raw state, is fibre brought into a condition for spinning by being "carded." By this process the fibre is crossed and interlocked, like the meshes of a spider's web. Worsted, on the other hand, is fibre prepared by "combing," and requires the long hairs to be laid parallel with each other, thereby making a yarn quite unlike the wool yarns. Throughout the processes of worsted yarn manufacture, the fibres of which it is composed are mechanically arranged according to one regular order of parallelism, producing by this method a more symmetrical thread than the pure woolen, where the fibres project from the main body or central core of the yarn on all points of its circumference.

Terms Used by Dressmakers.

The following is a list of the words and terms used by dressmakers, and their meanings: An apron is any sort of a draped skirt; a tablier is a flat, undraped skirt front; a full back means a straight back to the skirt, gathered in two or more rows at the top; a panel is a straight piece for the front or sides, set in between a trimming of some kind to convey the idea of an inlay; a Spanish flounce is one reaching from the knees down, and gathered to form an erect ruffle. Knife plaits are very narrow side plaits, and accordion plaits are still narrower, pressed in shape by machinery; kilt plaits are those turned one way, and box plaits have a fold to the right side and one to the left; double and triple box plaits have two or three folds on either side; a "kilt" means a skirt made entirely of kilt plaits.

Modern use of Hand-Looms.

Although the hand-loom has latterly been very largely superseded by the power-loom, yet it still holds an important place in the weaving of some kinds of textiles, for the reason that it is simple and can be readily altered to suit the requirements of any particular branch of woven fabrics. For figured goods, where irregular and complicated order of weft threads of several colors are used, the hand-loom is again the best adapted, simply because the weaver can readily control its motions so as to make them accord with the required method of coloring the design. Plush fabrics and various classes of tapestry cloths, carpets, and figured shawls are also, to some extent, woven on the hand-loom, but its special *role* is certainly in pattern production.

Practical Knowledge of the Ancients.

Roslini, a celebrated historian, says, concerning the knowledge of the Ancients, philologists, astronomers, chemists, painters, architects and physicians must return to Egypt to learn the origin of language and writing; of the cutting of granite with a copper chisel, and of giving elasticity to a copper sword; of making glass with the variegated hues of the rainbow; of moving single blocks of polished syenite *nine hundred tons* in weight any distance by land and water; of building arches round and pointed with masonic precision, unsurpassed at the present day and antecedent by 2,000 years before the Dorians are known in history; of fresco painting in imperishable colors, and of practical knowledge of anatomy."

A New Fibre Discovered.

A new fibric plant has just been discovered that is claimed to be better than ramie. It is a native of the West Indies, having been found on the Island of Trinidad. The great advantage possessed by this plant is that the ribbons at nearly all times of the year are easily despatched from the wooden portion by simply stripping them with the hand, and, therefore, a decorticating machine is not required as for ramie. When it is known how readily the stems allow themselves to be deprived of their coating of bark and fibre it will be seen what an advantage this simple fact gives the new product over many of the fibre-producing plants. All that is required is to cut the stems, which are fully 10 feet long, split the bark at the larger end and strip off the bark from end to end without stopping, as fortunately the stem have no side branches. Samples submitted to London brokers were most favorably reported on, and were valued at from £17 to £20 per ton. It is thought that ramie will probably be beaten by this new fibre, when cultivators fully realize the greater ease and consequent less expense with which it can be decorticated.

Wool and Cotton in France.

The French woolen industry requires annually about 220,000,000 lbs. of raw wool. Of this quantity France only produces about one-fifth, the remainder being supplied chiefly by Australia and La Plata. The French wool is grown in the central and southern Departments. France raises no cotton, but procures the raw material mainly from the United States. In 1890 she exported cotton fabrics to the amount of \$18,952,620, employing men, women and children 120,000.

Judging Hosiery.

All hosiery is to be judged by the fineness of the thread and the closeness of the texture, which in the case of stockings especially, may be partly appreciated by weighing, as it were, the articles in the hand. In ribbed stockings a deception is sometimes practiced, against which it is necessary to guard. The spaces between the ribs, which ought to be formed by an inversion of the stitch, contains no stitch at all, but an open range of threads pervious to the weather and utterly destitute of durability. As ribs of stockings exposed to sale are necessarily almost in contact, the fault cannot be detected without introducing the hand and opening the tissue, where it will be instantly apparent, and indeed will exactly resemble the flaw caused by a dropped stitch in a stocking in wear.

Terms in Use Among the Shoe Trade.

The following are the terms, and their abbreviations, used by all wholesale houses in billing shoes.

G. K. M. S. means glazed kid, machine sewed.

M. S. R. H. Button, means machine sewed, regular heel, button.

M. S. P. L. means machine sewed, plain toe.

M. S. F. H. means machine sewed, French heel.

H. D. S. means half donble sole.

M. S. S. means machine sewed, seamless.

M. S. means machine sewed.

½ D. S. means half double sole.

T. S. means tap sole.

F. H. means French heel.

R. H. means regular heel.

C. S. means common sense.

F. S. means fair stitch.

L. T. T. means London toe tip.

F. T. means French toe.

S. K. means split kip.

M. G. means Milwaukee grain.

Fineness of Fur, Wool and Human Hair

Although the thickness of the fibre of the finer furs has never been properly gauged, it will be a source of some satisfaction to know that "the diameter of the human hair varies from the 250th to the 600th part of an inch, while the fibre of the coarsest wool is about 500th, and the finest about the 1,500th part of an inch."

Lengths of Folds.

All dress silks are put up in folds $1\frac{1}{4}$ yards long (one aune.) French fabrics, such as satteens, lawns, organdies, etc. are usually put up in folds of one metre—one yard and a tenth. The same descriptions of fabrics made in the United States are folded in one yard lengths. Both French and American silks, however, are folded in aune lengths.

Hair Manufactures.

The various uses to which hair is applied are familiar to every one. The most valuable kind is human hair. The making of wigs, perukes, beards, whiskers, mustaches, eyebrows, fronts, chignons, etc., constitutes a trade in itself, in which many ingenious processes are involved. Belonging to what may be called the chemistry of the trade is the preparation of hair dyes, hair washes, hair pomades and hair powders. How far the artist succeeds in increasing the beauty of human hair by these additions is a matter of fashion and individual taste; but the amount of trade done in this way is very large. Horse hair—to prepare this for manufactures, it is classified into best, seconds, black, grey, soft, hard, curling, spinning, weaving, etc. To prepare the curled hair for stuffing cushions, etc., short horse hair is carded between teeth or combs, tipped or beaten in a heap with a cane, curled into a kind of rope steeped in cold water, heated in an oven, opened by partial uncurling in an opposite direction, and towzled or picked into curling pieces, which acquire a remarkable springy quality. Short white hair is used for brushes. Hair of medium length is spun into clothes-lines and woven into filtering bags, etc. The long hair, by processes of hecking, carding etc., is woven up into horsehair cloth for sofa coverings, etc., which has a black, flaxed warp with a horsehair weft, each weft thread consisting of a single hair. According to the length of the hair, so can this cloth be made to widths varying from 14 to 40 inches. Long white horsehairs are used for violin bows and fishing lines. At some of the industrial exhibitions there have been displayed, from Russia, bowls, dishes and plates made of hare and rabbit hair, felted into a tough layer and varnished; they had something the appearance of papier-mache. These, however, were examples rather of fur-work than hair-work. For various purposes in arts, the hair of the camel, fitch, sable, hog, cow, badger, goat, dog and other animals is used.

Widow's "Weeds."

The custom for widows to wear a peculiar style of cap is of Roman origin, and the wearing of some sort of weeds was compulsory for ten months. The term "weeds" first began to be used during the Middle Ages to signify an entire dress.

Some of the Uses of Silk.

Silk is an agreeable and healthy material. Used in dress, it retains the electricity of our bodies; in the drapery of our rooms and furniture-covers it reflects the sunbeams, giving them a quicker brilliancy, and it heightens colors with a charming light. It has an element of cheerfulness, of which the dull surface of wool and linen are destitute. It also promotes cleanliness, will not readily gather dirt, and does not harbor vermin as kindly as wool does. Its continually growing use by man, accordingly, is beneficial in many ways. Grace and beauty, even, owe something to silk. You can not stiffen it like thick woolen or linen without destroying all its gloss and value. The more silk ribbons, therefore—the more silk kerchiefs and robes are used, instead of linen and wool—the more graceful becomes the outward aspect of mankind. The fluttering of ribbon, the rustling and flowing skirts of silk, the kerchief knotted loosely around the neck, have materially contributed to make our customs more natural and pleasing to the eye.

Facts About Cotton Textures.

The beauty or excellence of some cotton cloths consist in the closeness of their texture, that of others in the openness and regularity of the intervals between the warp and weft threads. Recent experiments have shown that cotton may be heated to 248 deg. F., for three hours, without apparent injury. The same is true of printed cottons. The temperature, however, if continued for a long period, will slightly alter the color of cotton, but will not otherwise injure it. According to the most reliable historical and manufacturing authorities, no cotton sheetings, shirtings, ginghams or checks, were made in the United States prior to the year 1790. All such classes of goods then used by our people were imported, being of English manufacture, and of linen warp, with cotton weft. The first cotton goods of English make in which both the warp and weft were wholly and entirely of cotton, were made at Derby, in 1793. After a considerable quantity of these goods had been made up, the manufacturer of them was informed that an existing law imposed not only a double duty upon them, but also forbade the sale of them in the home market. This law had been enacted by Parliament many years before for the protection of the linen weavers, but in 1797 it was repealed.

Harmony of Colors.

There are but three primary colors generally recognized, blue, red and yellow. These are called primary, because they cannot be produced by compounding any other colors. The secondary colors are green, purple and orange. These are called secondaries because blue and yellow make green, red and blue make purple, and red and yellow, orange. From these is derived the tertiaries, olive, citrine and russet. Purple and green make olive; orange and green citrine; purple and orange, russet. Thus we have the three classifications denoting all the colors proper extant. From these are derived the hues, tints and shades. A hue is obtained by the combination of any of the primaries. The hue may vary according to the predominating influence of one color over another. A "tint" is obtained by simply adding white to any of these colors; and to form a "shade" add black or any of the dark colors.

So from the above we have the alphabet of colors. The varieties of tones, tints, hues or shades to be obtained from this alphabet are as kaliedioscopic in their possibilities as the alphabet of letters. The hand of man or the skill of the artist will never exhaust them

There is still another term used in relation to colors which bears its own significance also. While we have our three primary colors to start from, yet we have no standard "tone" from which to start our secondaries. There are many different kinds of red, yellow and blue, and we signify the difference as "tones," the same as the term is applied to different instruments of the same kind. One often says that this piano has a better tone than that piano. So we will find in selecting our primaries. While some of the high toned reds will produce a much more beautiful tint, yet they are too fugitive to use for dyeing fabrics, while the same is true of greens and yellows.

Wool has generally the strongest affinity to color, when it comes to dyeing. Next to wool, silk and other animal substances receive it best; cotton is the third, and hemp and flax follow successively. As a rule, pigments and dyestuffs do not produce permanent colors, and some substance is required to produce an affinity between the cloth and coloring matter. The substances that are employed to act as this bond of union are called "mordants," whose uses were known to the Egyptians and other nations of remote antiquity. Specifically, mordants, in dyeing and cloth printing, is a body, which having two-fold coloring particles, serves as a bond of unity between them, and thus gives a fixity to the dyes; or, it signifies a substance by which, combined with the coloring particles in the pores on textile filaments, renders them insoluble in soapy and weak alkaline solutions. Mordants is also the substance previously applied to the goods in order that they may afterward retain in part the dye.

Russian Industry.

The largest cotton mill in the world is that of Kranholm, in Russia. This colossal establishment contains 340,000 spindles and 2,200 looms, and gives employment to 7,000 hands. The work people are Russians and Esthonians. The week's work is calculated at 79 hours, and the wages vary from \$9.00 to \$30.00 per month. Russia also owns nearly 50,000,000 ordinary sheep and 15,000,000 merinos. European Russia has 40,000,000, of which 38,000,000 are ordinary sheep and 2,000,000 merinos. The Caucasus has 12,000,000, of which 10,000,000 are ordinary sheep and 2,000,000 are merinos. Sheep are met with in nearly every province of Russia, though they are far more numerous in the Southern provinces than those of the North.

Gold Thread and Gold Lace.

The base of the "gold thread" of commerce is silver, bought by the European manufacturers from the Bank of England in cakes weighing about 1000 ounces. Gold leaf is carefully incorporated with the silver by hammering, and afterward the whole is subjected to a charcoal fire. The bar is now ready for conversion into wire. This is accomplished by drawing it from 100 to 150 times through ever diminishing holes in steel plates; and finally, when the capabilities of this metal has been exhausted, the wire is passed through apertures in diamonds, sapphires or rubies. The delicate wire thus obtained must now be passed through the steel rollers of one of Herr Krupp's little "flattening mills." This brings the wire to the final process—the spinning of the flattened wire round silk, to form the golden thread of commerce.

Gold Lace or more properly gilt lace is a thin covering of gold applied to a surface of silver, which again has a foundation of silk. The silken threads for making this material are wound around with gold wire so thickly as to conceal the silk; and the making of this gold wire is still more singular than the making of gold thread. In the first place, the refiner prepares a solid rod of silver, about an inch in thickness; he beats this rod, applies upon the surface a coating of gold leaf, burnishes this down, applies another coating, burnishes this down, and so on until the gold is about one hundredth part of the thickness of the silver. Then the rod is subjected to a train of processes which brings it down to the state of fine wire; it is then passed through holes in a steel plate, lessened step by step in diameter. The gold never deserts the silver, but adheres closely to it and shares all its mutations. It was one hundredth part the thickness of the silver at the beginning, and it maintains the same ratio to the end. It has been calculated that the gold on the very finest silver wire for gold lace is not more than one third of one millionth part of an inch in thickness; that is, not above one-tenth the thickness of ordinary leaf gold, such as dentists use.

Value of Royal Laces.

The lace treasures of royal and wealthy European families are practically beyond price. Queen Victoria's laces are valued at over half a million dollars. Those of ex-Empress Eugenia aggregated almost a million. The Spanish regal laces are not less precious, and the sacred vestments and sacramental furnishings of St. Peter's and other Roman churches are of incalculable value.

Harmonious Colors.

The following list of harmonious color contrasts will be found very useful in window trimming and interior store decoration: Red with green, blue with orange, yellow with violet, black with warm-brown, chocolate with light blue, violet with pale-green, violet with light rose, deep blue with golden brown, deep red with gray, maroon with warm-green, deep blue with pink, chocolate with pea green, maroon with deep blue, claret with buff, black with warm green, black with scarlet.

Customs Decision—Duty on "Diagonals."

The Supreme Court of the United States has decided, that an importation of cloths known as "diagonals" was, under the law as it existed before the recent passage of the worsted law, dutiable at 24c per pound and 35 per cent, ad valorem as "manufactures of worsted not otherwise provided for," and not at 35c per pound and 35 per cent. ad valorem as "manufactures of wool." These goods are known to the trade as "worsted," and the court holds that they must, therefore, be held to be dutiable under the paragraph relating to "worsted," regardless of the fact that they are the product of wool.

Origin of Long Measure.

Our measures of length originated in the dawn of civilization, and came to us through the Anglo-Saxons. The yard was originally the length of a king's arm; the foot the length of his pedal extremities. The word inch is derived from the Latin *uncia*, a twelfth part, but why the foot was divided into twelfths, instead of tenths or elevenths, no one claims to be wise enough to tell. It has been suggested that probably the inch was originally the length of the second joint of the forefinger, and that twelve of these about equal the length of the forearm, which averages about one foot in length. Aune, which is a cloth measure of one yard and a quarter, it derived from the Latin *alna* forearm. The inch used to be divided into three "barleycorns," which were simply the length of the grain or "corn" or the barley. The "mile" was reckoned at one 1,000 paces, as its name shows, for it is derived from the Latin phrase *millia passuum*, "a thousand paces." The origin of the "rod" is doubtful.

Prices of Standard Cottons for a Series of Years.

The following table give the wholesale prices muslins sheeting, ticking, denim, drilling jean, prints, gingham, etc., at different periods during the past 30 years. The first column gives the price of standard makes in the month of January 1859; the second column prices in January 1860; the third column prices in January 1887; the fourth column prices in August 1889; the fifth column prices in January 1891 :

UNBLEACHED MUSLIN AND SHEETING:

	Price in 1859 Cents	Price in 1860 Cents	Price in 1887 Cents	Price 1889 Cents	Price 1891 Cents
Appleton A 36-inch.....	9	8½	7	6¾	7
Atlantic A 36-in.....	9	8¾	7¼	7	7
Graniteville EE 36 in	8¼	7	6½	6¼	6
Great Falls E 36-in.....	7	7	7	7	7
Indian Head 36-in.....	9	8½	7¼	6¾	7½
Indian Head 30-in.....	7			7	7
Indian Head 40-in.....	11½	11	10½	10	10
Massachusetts A 36-in.....	7	7¾	7	6½	6½
Nashua R 36-in.....	8	8½	7	7	7¼
Pepperell E 39-in.....	9	9	7	7	7
Pepperell R 36-in.....	8¾	9	6½	6½	6½
Pepperell O 33-in.....	8		6	6	6
Pocassett Canoe 36-in.....	9	8	6½	6¾	6¾
Stark A 36-in	9	8	7¼	7	7

BLEACHED MUSLINS AND SHEETINGS.

Blackstone A 36-in	10	10	8	7½	7¾
Boott R 30-in	7		5	5¼	5
Great Falls M 33-in	9	9	6¼	6¾	6¾
Hope 36-in.....	9	8	7½	7¼	7½
Lonsdale 36-in	11	12	9	8	8½
Masonville 36-in	12		9	8½	8¾
New York Mills	15	15	11	10	10½
Wamsutta 36-in	12	13	11	10	10½
Wauregan WT 36-in	12	13	9	9¼	9¼
White Rock 36-in.....		12	8	8	7½
Pepperell 6-4.....		16	14	13½	13½
Pepperell 9-4.....		26	20	20	18
Pepperell 10-4.....		30	23	24	22½
Utica Steam Cot. Mills 36-in		10	11	9	8

BROWN DRILLING.

Laconia unbleachsd.....	9		7	6¾	7
Laconia blue	11		10	10	10½
Massachusetts.....	9	8	7	6¾	6¼
Pepperell.....	10	9	7	7	7¼
Stark	10	9	7	7	7¼

Prices of Cottons—Continued.

DENIMS.

	Price in 1859 Cents	Price in 1860 Cents	Price in 1887 Cents	Price 1889 Cents	Price 1891 Cents
Amoskeag.....	14½	15	14	13	13
Columbian.....	10	10	12	10	10
Otis AAA.....	10	10	12	10	10½
Pearl River.....	15	15	14	13	12
Warren BB.....	10	10	10	9	9½
York.....	15	14½	13½	12½	12½

CORSET JEANS.

Pepperell colored.....	10	9	8½	8	8½
Pepperell bleached.....	10	9½	8½	8	8½
Naumkeag bleach'd and col'd.....	9½	9	7½	7	7½
Laconia bleach'd and col'd.....	9½	8	6½	6½	6½

TICKINGS.

Amoskeag ACA 32-in.....	16½	17	14	12½	12½
Amoskeag A 32-in.....	13	13½	13	11½	11
Amoskeag B 32-in.....	11½	12½	12	11	10½
Amoskeag C 32-in.....	11	11½	11½	10½	10½
Amoskeag D.....	10	10½	11	9½	9½
Amoskeag awning 32-in.....	11	11½	13	15	15
Conestoga CCA 30-in.....	14½	14½	13	11	11½
Hamilton 30-in.....	11½	11½	11	10	10½
Pearl River 32-in.....	15½	15½	13½	12	12
Thorndike A.....	9½	9½	8	7½	7
York 30-in.....	13½	12½	13	12	12½
York 32-in.....	16	16	15	13	15

PRINTS.

Allens staples.....	10	9½	5½	6	6
American.....	20	9½	5½	6	6½
Garner.....	9½	8	5½	6	6
Merrimack.....	10	9½	6	6½	6½

GINGHAM

Lancaster staples.....	10	9	7½	6	7¼
Manchester.....	9½	8	6¾	5½	6

Sell Good Goods.

In selling goods never talk price, but always quality. Quality is what after all, makes or loses a customer. Price has nothing to do with a customer's palate. We are all, more or less, slaves to appetite, and know no other law than self gratification. The pleased palate is wedded to the sources of its gratification, and does not stop to compare prices. If an article is offered cheaper by some competitor, the pleased customer says it is because the service is inefficient, or that a low price on one article is only an excuse for an extravagant price on another, and therefore he becomes the steady patron of the store where quality is the first considered, and where a fair price is the rule.

FABRICS IN RHYME.

Aprons.

Stephen Gosson in his *Pleasant Quippes for Upstart Gentlewomen*, 1596, inveighs against aprons in the following lines:

“ These aprons white of finest thred,
So closely tied, so dearly bought,
So finely fringed, so nicely spred.
So quaintlie cut, so richlie wrought;
Were they in work to save their cotes,
They need not cost so many grotes.”

In the *Ballad of Hardyknute*, published in the year 1719, is a notice of

“ An apron set with many a dice,
Of needlework so rare,
Wove by nae hand, as ye may guess,
Safe that of Fairly fair.”

“ Fortune in man has some small difference made:
One flaunts in rags, one flutters in brocade;
The cobbler apron'd, and the parson gown'd,
The friar hooded and the monarch crown'd.”

POPE: *Essay on Man*.

Bombast.

D'Urfey, in his *Pills to Purge Melancholly*, refers to—

“ My high commode, my damask gown,
My laced shoes of Spanish leather;
A bombast hat upon my head,
And a dainty plume of feather.”

In a ballad entitled *The Sorrowful Lamentation of the Pedlars*, we find—

“ Here's garters for hose, and cotton for shoes,
And there's fine bombast that none would refuse.
This present let John give his sweet mistress Jane,
And then of unkindness she shall not complain.
Then maidens and men, come, see what you lack,
And buy the fine things that I have in my pack.”

“ Thy bodies bolstered out,
With bombast and with bagges
Thy roales, thy ruffs, thy cauls, thy cuffes,
Thy jerkins and thy jagges.”

GEORGE GASCOIGNE: *The Story of Ferdinand Jeronimi*, 1590.

Busk.

In *Albion's England*, the following passage, alluding to busk occurs:

“ Her face was masked, her locks were curl'd,
Her body pent with buske,
And, which was needless, she more sweet,
Her raiment scented musk.”

Hall in his *Satires*, 1598, in dealing with the dandies, speaks of those who

“ Wear curled periwigs, and chalk their face,
And still are poring on their pocket glass,
Attired with ruffs, and fans, and partlet strips,
And busks and farthingales about their hips.”

Cap.

In a play of Dekker's *The Honest Whore*, 1630, caps are highly spoken of:

“ It's light for summer, and in cold it sits
Close to the skull, a warm house for the wits;
It shows the whole face boldly, 'tis not made
As if a man to look on't were afraid;
Nor like a draper's shop, with broad dark shed;
For he's no citizen that hides his head.
Hats, caps, as proper are to city gowns,
As to armor helmets, or to kings their crowns.

Carding.

“ With wiry teeth, revolving cards release
The tangled knots, and smooth the ravell'd fleece:
Next moves the iron hand with fingers fine,
Combs the wide card, and forms the eternal line.”

“ Soon the clothier's shears
And burler's thistle skim the surface sheen.”

DYER: *The Fleece*.

Garters.

“ When we were maids (quoth one of them)
Was no such new-found pride,
Then wore they shoes of ease, now of
An inch-broad-corked high.
Black kersey stockings, worsted now,
Yea, silk of youthful'st die;
Garters of list, but now of silk.
Some edged deep with gold;
With costlier toys, for corser times,
Than used prehaps of old.”

Warner: *Albion's England*, 1606.

“ Where to should I disclose
The gathering of her hose.”

SKELTON: *Boke of Philip Sparrow*.

Cotton and Wool.

“ The loaded distaff in the left hand placed,
 With spongy coils of snow white wool was graced;
 From these the right hand lengthening fibres drew,
 Which into thread 'neath nimble fingers grew.
 At intervals a gentle touch was given,
 By which the twirling whorl was onward driven,
 Then when the sinking spindle reach'd the ground,
 The recent thread around its spire was wound,
 Until the clasp within its nipping cleft
 Held fast the newly-finished length of weft.”

“ And every sultry clime (yields) the snowy down
 Of cotton bursting from its stubborn shell,
 To gleam amid the verdure of the grove.”

Embroidery.

“ Here the needle plies its busy task;
 The pattern grows, the well-depicted flower,
 Wrought patiently into the snowy lawn,
 Unfolds its bosom; buds, and leaves, and sprigs,
 And curling tendrils; gracefully dispos'd
 Follow the nimble fingers of the fair.”

COWPER: *The Winter Evening*.

“ Too long my erring eyes have rovd
 On city dames in scarlet dress;
 And scorned the charming village maid,
 With innocence and embroidery blest.”

THOMPSON: *The Milkmaid*.

Hoops.

Somerville thus alludes to a woman who endeavored to conceal the fruits of indiscreet love by wearing a huge petticoat:

“ 'Twas vain to hide the apparent load,
 For hoops were not then a la mode.”
 “ These hoops that hips and paunch do hide,
 And heave aloft the gay hoyst train,
 As they are now in use for pride
 So did they first begin of pain.”

STEPHEN GOSSON: *Pleasant Quippes for Upstart Gentlewomen*, 1596.

“ At coming in you saw her stoop,
 The entry brushed against her hoop.” SWIFT.

“ Let her hoop extended wide,
 Show what petticoats should hide:
 Garters of the softest silk,
 Stockings whiter than the milk.”

FAWKES: *Odes of Anacreon*, 1755.

“ From the hoop's bewitching round
 The very shoe has power to wound.”

Lawn.

" Her lawny veil,
That from his sight it enviously should hide her,
Those limbs, in lawn and softest silk array'd,
From sun-beams guarded, and of winds afraid.
Can they bear angry Jove? Can they resist?

PRIOR: *Edwin and Emma.*

" If thou but please to walk into the draper's,
To buy thee cambrick, calico or lawn,
If thou the whiteness of the same wouldst prove,
From thy far whiter hand, pluck off thy glove."

" Lawn as white as driven snow;
Cyprus as black as ere was crow;
Gloves, as sweet as damask roses."

" Chains, coronets, pendants, bracelets and ear-rings;
Pins, girdles, spangles, embroideries and rings,
Shadows, rebatoes, ribbands, ruffs, cuffs, cauls,
Thin taffeties, cobweb lawn and farthingals."

" 'Tis from high life that characters are drawn,
A saint in crape is twice a saint in lawn."

On the Fan.

" The fan shall flutter in all female hands,
And various fashions learn from various lands.
For this shall elephants their ivory shed,
And polished sticks the waving engines spread.
His clouded main the tortoise shall resign,
And round the rivet pearly circles shine.
On this shall Indians all their art employ,
And with bright colours stain the gaudy toy;
Their pains shall here in wildest fancies flow,
Their dress, their customs, their religions show.
Gay France shall make the fan her artist's care,
And with the costly trinket arm the fair."

" Alas! what would our silk mercers be,
What would they do, sweet Hempseed, without thee?
Rash, taffeta, paropa, and novato,
Shag, filizetta, damask, and mochado."

" With curious needle-work
A garment gan she make,
Wherein she wrote that bale she bode,
And all for bewties sake."

GASCOIGNE (1530-1577): *The Complaint of Philomore.*

" Just like a plow-boy tir'd in a brown jacket,
And breeches round, long leather point, on placket."

GAYTON.

Hats and Caps.

" So many pointed caps,
Laced with double flaps,
And so many felted hats
Saw I never."

SKELTON.

" Their collars, cravats, and false beads
With velvet hats high on their heads
Corded with gold like one younkier,
Browed about with golden threads
And all for newfangelness of gear."

Miscellaneous.

" I come unknown to any of the rest
To tell you news, I saw the lady drest;
The woman plays to-day, mistake me not,
No man in gown or page in petty-coat;
A women to my knowledge, yet I can't
(If I should dye) make affidavit on't."

" Her feet beneath her petticoat,
Like little mice stole in and out,
As if they fear'd the light."

SIR JOHN SUCKLINC(1609-1641).

" Short under petticoats, pure, fine,
Some of Japan stuff, some of Chine,
With knee-high galloon bottomed;
Another quilted white and red,
With a broad Flanders lace below."

JOHN EVELYN: *Tyrranus; or The Mode*, 1661

" To fifty chosen syllys of special note
We trust the important charge, the petticoat;
Oft have we known that seven fold fence to fail,
Though stiff with lonys, arm'd with ribs of whale."

POPE: *Rape of the Lock*, 1714.

" If the maids a spinning goe,
Burn the flax, and fire the tow,
Scorch their plackets."

HERRICK.

" Widows doe display
The stuffs, the velvets, plusher, fringes, lace,
And all the original riots of the place."

BEN JONSON.

" Richesse a robe of purple on had,
Ne trow not that she had it mad,
Ne by a thousand deale as riche,
Ne none so faire for it full well
With orfrais laid was every dell
And purtraid in the ribanings
With Dukes stories and of Kings."

Miscellaneous.

‘ He must change his russeting
 For satin and silke
 And he must weare no linnen shirte
 That is not white as milke.
 To come of well-borne familie.”

TARLTON.

‘ I saw a smith stand with his hammer thus
 The whilst his iron did on the anvil cool,
 With open mouth swallowing a tailors news;
 Who, with his shears and mersure in his hand,
 Standing on slippers (which his nimble haste
 Had falsely thrust upon contrary feet),
 Told of many a thousand warlike French,
 That were embattled and rank’d in Kent.”

SHAKESPEARE: *King John*.

“ Nor deems he wiser him, who gives his noon
 To Miss, the mercer’s plague, from shop to shop,
 Wond’ring and litt’ridg with unfolded silks
 The polish’d counter, and approving none,
 Or peomising with smiles to call again.”

COWPER: 1784

Hair for Mattresses.

The best hair for mattresses is said to be horsehair. When hair is prepared for mattresses it is twisted round wood on cylinders and boiled, and then baked in an oven to give it a curly and springy feature.

Mosquetaire Gloves.

Mosquetaire was formerly the name of a turn-over collar, usually of plain starched linen, worn by women about 1850. The mousquetaire glove is a glove with a long, loose top, with a short lengthwise slit at the wrist, and is so called from its resemblance to a military glove, or the gloves of a musketeer (French *mousquetaire*.)

Gobelin Dress Fabrics.

Gobelin dress fabrics belong to a species of large brocades, woven of wool and silk mixed. One of the peculiar features of this material is the peculiar coloring of them, which is always done in a kind of faded, delicate shades. The woven-in patterns are technically so perfect as to appear like embroidered work, while the ground of the fabric resembles the well-known Turkish shawl pattern. Multi-colored silk threads in relief, closely cover the surface, which is intersected by large velvet or moire on figured stripes. Rich and striking effects are produced by ornamenting this Gobelin fabric with golden crescents and similar figures, arranged in stripes and all-over designs.

Origin of Sur-Names from the Wool Trade.

For ages wool was the staple of England, and thousands of busy operatives were employed in the various processes necessary before the wool could be transferred from the back of the sheep to the back of the man. At every step, proper names indicative of the calling of those who bore them sprang up, so that, were we ignorant of the fact, that our ancestors the Saxons dealt in wool and made cloth, we might draw perfectly correct and legitimate conclusions as to the business, its extent and various departments, from the family names still surviving. In the first place, the sheep were cared for by the Shepard or Shepherd, a family name which with variations of spelling, is extremely common both in this country and England. Shearing was the first operation requiring either delicacy or skill, and Shearer, Shearman. Shurman and similar names bespeak their own ancestry. The wool was then placed in bags, made by the sackers or canvasers, and was ready for the merchant, an individual often known as Stapler, Wool, Wooler, Woolman or Woolsey, or in French as Lanier or Lanyer. He consigned it to the care of persons who transported it from place to place on the backs of pack horses or in vehicles, and were thus known as the Packers, the Carters or the Carriers. The wool was then handed over to the Carders and Combers, or Kempers and Kemsters, as they were variously called, and passed from their hands to those of the Spinners, who used implements made by the Spindlers and Slayers, afterwards going to the Weavers, Weevers, Webbs, Webbers or feminine Websters. The cloth was next "teased" to bring out the nap, a process done by the Teasers, Tosers, Teazelers, or Taylors, when the woollen cloth was finished and ready for the Dyer, Litter, or Lister. The Fullers, Fullertons, Fullersons and Fullmans undertook the process of shrinking the cloth, in which they were assisted by the Walkers, who trod it with their feet, accompanied by the Beaters, Beatermans, Bates, Batts and Battmans, who used sticks, bats and mallets instead of their heels and toes. The designation of the process is seen to give a name to all engaged in a special work, just as at present, and further to be adopted as a family name by some who perhaps attained notable excellencoe over their fellows, or were led by chance or caprice to adopt the title of their calling as their own surname.

Origin of Thread.

Samuel Slater, of Slaterville, Rhode Island, is generally regarded as the father of cotton manufacturing in this country. It is only known to a few that the world is indebted to this man for the discovery of cotton thread. In 1794, while spinning a quantity of Sea Island cotton, the beauty and evenness of the yarn attracted the attention of Mrs.

Slater. The question arose, if this is doubled and twisted, why will it not make good sewing thread? The experiment was made, and, in order to be fully satisfied of the result, a sheet was made with one-half linen thread and the other half of cotton. It was immediately put into use, and the first thread that gave way was the linen. From this period he commenced the manufacture of thread, and it soon spread into England, France and other European countries, where it is generally supposed to be of English origin. Samuel Slater was born in Derbyshire, England, in 1768. When 22 years old he arrived in the United States, and entered into contract with Messrs. Almy and Brown at Providence Rhode Island, for the erection of cotton spinning machinery. December, 1890 he started a mill with three carding engines and seventy spindles, which was virtually the beginning of cotton manufacture in this country. He died at Webster Massachusetts, April 22, 1835.

The Metric System of Length.

The Metric System is the system of measurement of which the *metre* is the fundamental unit. First adopted in France in the year 1800, it is in use in most other civilized countries, except the English speaking countries, and is now almost universally adopted for scientific measurements. Its use is permitted in Great Britain, and was legalized in the United States in 1866. The metre, the unit of length, is the one ten-millionth part of the earth's meridian quadrant, that is, the distance from either pole to the equator, which is just one-fourth of the earth's circumference. The metre is one ten-millionth part of this distance. Its length is 39.370 inches, or about one yard and a tenth.

1 millimetre	=	0.03937 inches.
1 centimetre	=	0.3937 inches.
1 decimetre	=	3.93708 inches.
1 metre	=	3.2809 feet.
1 decametre	=	10.9363 yards.
1 hectometre	=	109.3633 yards.
1 kilometre	=	0.62138 miles.

Cloth Measure.

Cloth Measure is the standard system of lineal units employed exclusively in measuring cloth. The table is:

YARD.		QUARTERS.		NAILS.		INCHES.
1	=	4	=	16	=	36
		1	=	4	=	9
				1	=	2¼

The Origin of Commerce.

When tribes had abandoned their wandering life, and settled in fixed abodes, their new situation gave rise to new ideas and pursuits. They soon found that the sources from which they had formerly derived this subsistence, the spontaneous fruits of the earth, and the flesh of wild animals killed in the chase, were insufficient to maintain them when their numbers were increased, and their situation more confined. Hence they were obliged to have recourse to the breeding of tame cattle, and to the culture of the earth. Property being established and ascertained, men began to exchange one rude commodity for another. While their wants and their desires were confined within narrow bounds they had no other idea of traffic but that of simple barter. The husbandman exchanged a part of his harvest for the cattle of the shepherd; the hunter gave the prey which he had caught at the chase for the honey and the fruits which his neighbor had gathered in the woods. Thus commercial intercourse begins among the members of the same community. From the inequality and diversity with which the productions of nature are distributed in different countries, a more general correspondence was by degrees established between distant tribes and nations. No longer satisfied with the necessities, they aspired to the conveniences, the accommodations, and the luxuries of life. As the objects of commerce became varied and multiplied, they invited a common measure or standard of the value of commodities; after different experiments of this kind among different nations the precious metals, from their rarity, their beauty, their permanency, and facility of transportation, were universally adopted as the symbols of property, and the representatives of all the productions that are formed by nature, or fabricated by human industry. Commerce, thus introduced by the exchange of commodities between individuals, gradually diffused itself from city to city, and from kingdom to kingdom, till at last it comprehended and united the remotest regions of the earth, and the most distant of the world. Commerce first taught nations to see with good will the wealth and prosperity of each other. Before, the patriot, unless sufficiently advanced in culture to feel the world his country, wished all countries weak, poor and ill governed but his own; he now sees in their wealth and progress a direct source of wealth and progress in his own country. It is commerce which is rapidly rendering war obsolete, by strengthening and multiplying personal interests which are in natural opposition to it. And it may be said, without exaggeration, that the great extent and rapid increase of international trade, in being the principal guarantee of the peace of the world, is of the greatest permanent security for the uninterrupted progress of the ideas, the institutions, and the commerce of human race.

THE TARIFF.

The following is an official copy of the new Tariff Act, so far as it concerns the Dry Goods and kindred branches of trade :

COTTON MANUFACTURES.

Cotton thread, yarns, or warp yarn, whether single or advanced beyond the condition of single, by grouping or twisting two or more single yarns together, whether on beams or in bundles, skeins or cops, or in any other form, except spool thread of cotton hereinafter provided for, valued at not exceeding 25c. per pound, 10c. per pound; valued at over 25c. per lb. and not exceeding 40c. per lb. 18c. per lb.; valued at over 40c. per lb. and not exceeding 50c. per lb., 23c. per lb.; valued at over 50c. per pound, and not exceeding 60c. per lb., 28c. per lb.; valued at over 60c. per pound and not exceeding 70c. per lb. 33c. per lb.; valued at over 70c. per pound and not exceeding 80c. per lb., 38c. per lb.; valued at over 80c. per pound and not exceeding \$1 per lb., 48c. per lb.; valued at over \$1 per lb. 50 p. c. ad valorem.

Spool thread of cotton, containing on each spool not exceeding 100 yards of thread, 7c. per dozen; exceeding 100 yards on each spool for every additional 100 yards of thread or fractional part of 100 yards, 7c. per dozen spools.

Cotton cloth not bleached, dyed colored, stained, painted or printed, and not exceeding 50 threads to the square inch, counting the warp and filling, 2c. per square yard; if bleached, $2\frac{1}{2}$ c. per square yard; if dyed, colored, stained, painted or printed, 4c. per square yard.

Cotton cloth, not bleached, dyed, colored, stained, painted or printed, exceeding 50 and not exceeding 100 threads to the square inch, counting the warp and filling $2\frac{1}{4}$ c. per sq. yd.; if bleached 3c. per sq. yd.; if dyed colored, stained, painted or printed, 4c. per sq. yd.; Provided, that on all cotton cloth not exceeding 100 threads to the sq. in., counting the warp and filling, not bleached dyed, colored, stained, painted or printed, valued at over $6\frac{1}{2}$ c. per sq. yd.; bleached, valued at over 9c. per sq. yd.; and dyed, colored, stained, painted or printed, valued at over 12c. per sq. yd. there shall be levied, collected, and paid a duty of 35c. p. c. ad valorem.

Cotton cloth not bleached, dyed colored, stained, painted or printed, exceeding 100 and not exceeding 150 threads to the sq. in.; counting the warp and filling 3c. per sq. yd.; if bleached, 4c. per sq. yd.; if dyed, colored, stained, painted or printed, 5c. per sq. yd.: Provided, that on all cotton cloth exceeding 100 and not exceeding 150 threads to the sq. in. counting the warp and filling, not bleached, dyed colored stained, painted or printed, valued at over $7\frac{1}{2}$ c. per sq. yd.; bleached at over 10c. per sq. yd.; dyed, colored, stained painted or printed, valued at over $12\frac{1}{2}$ c. sq. yd. there shall be levied, collected and a duty of 40 p. c. ad valorem.

Cotton cloth, not bleached, dyed, colored, stained, painted or printed exceeding 150 and not exceeding 200 threads to the sq. in., counting the warp and filling, $3\frac{1}{2}$ c. per sq. yd.; if bleached, $4\frac{1}{2}$ per sq. yd.; if dyed, colored, stained, painted or printed, $5\frac{1}{2}$ c. per sq. yd.; Provided, that on all cotton cloth exceeding 150 and not exceeding 200 threads to the sq in counting the warp and filling, not bleached dyed colored stained paint-

ed or printed, valued at over 8c. per sq. yd.; bleached, valued at over 10c. per sq. yd.; dyed, colored, stained, painted or printed, valued at over 12c. per sq. yd., there shall be levied, collected and paid a duty of 45 p. c. ad valorem.

Cotton cloth, not bleached, dyed, colored, stained, painted or printed, exceeding 200 to the sq. in., counting the warp and filling, 4½c. per sq. yd.; if bleached 5½c. per sq. yd.; if dyed, colored, stained, painted or printed 6¾c. per sq. yd.: Provided, that on all such cotton cloths not bleached, dyed colored, stained, painted or printed, valued at over 10c. per sq. yd.; bleached, valued at over 12c. per sq. yd., and dyed, colored, stained, painted or printed, valued over 15c. per sq. yd., there shall be levied, collected, and paid a duty of 45 p. c. ad valorem. Provided further, that on cotton cloth, bleached, dyed, colored, stained, painted or printed, containing an mixture of silk, and not otherwise provided for, there shall be levied, collected, and paid a duty of 10c. per sq. yd. and in addition thereto 35 p. c. ad valorem.

Clothing ready made, and articles of wearing apparel of every description, handkerchiefs and neckties or neckware composed of cotton or other vegetable fibre, or of which cotton or other vegetable fibre is the component material of chief value, made up or manufactured wholly or in part by the tailor, seamstress or manufacturer, all of the foregoing not especially provided for in this act, 50 p. c. ad valorem. Provided, that all such clothing, ready made, and articles of wearing apparel having india rubber as a component material (not including gloves or elastic articles that are especially provided for in this act), shall be subject to a duty of 50c. per lb., and in addition thereto 50c. p. c. ad valorem.

Plushes, velvets, velveteens, corduroys, and all pile fabrics composed of cotton or other vegetable fibre, not bleached, dyed, colored, stained painted or printed, 10c. per sq. yd. and 20 p. c. ad valorem; on all such goods if bleached, 12c. per sq. yd. and 20 p. c. ad valorem; if dyed, colored, stained painted or printed, 14c. per sq. yd. and 20 p. c. ad valorem; but none of the foregoing articles in this paragraph shall pay a less rate of duty than 40 p. c. ad valorem.

Chenille curtains, table covers, and all goods manufactured of cotton chenille, or of which cotton chenille forms the component material of chief value 60 p. c. ad valorem.

Stockings, hose and half-hose, made on knitting machines or frames, composed of cotton and other vegetable fibre and not otherwise especially provided for in this act, and shirts and drawers composed of cotton, valued at not more than \$1.50 per dozen, 35 p. c. ad valorem.

Stockings, hose and half-hose, selvedged, fashioned, narrowed or shaped wholly or in part by knitting machines or frames, or knit by hand including such as are commercial known as seamless stockings, hose or half-hose, all the above composed of cotton or other vegetable fibre, finished or unfinished, valued at not more than 60c. per dozen pairs, and in addition thereto 20c. p. c. ad valorem; valued at more than 60c. per dozen pairs and not more than \$2 per dozen pairs, 50c. per dozen pairs, and in addition thereto 30 p. c. ad valorem; valued at more than \$2 per dozen pairs and not more than \$4 per dozen pairs, 75c. per dozen pairs, and in addition thereto 40 p. c. ad valorem; valued at more than \$4 per dozen pairs, \$1 per dozen pairs, and in addition there to 40 p. c. ad val-

orem; and all shirts and drawers composed of cotton and other vegetable fibre valued at more than \$1,50 per dozen, and less than \$3 per dozen, \$1 per dozen. and in addition thereto 35 p. c. ad valorem; valued at more than \$3 per dozen, and not more than \$5 per dozen, \$1,25 per dozen, and in addition there to, 40 p. c. ad valorem; valued at more than \$5 per dozen and not more than \$7 per dozen, \$1,50 per dozen, and in addition thereto 40 p. c. ad valorem; valued at more than \$7 per dozen, \$2 per dozen, and in addition thereto, 40 p. c. ad valorem.

Cotton cords, braids, boot, shoe, and corset lacings, 35c. per lb; cotton gimps, galloons, webbing, goring, suspenders, and braces, any of the foregoing which are elastic or nonelastic, 40 p. c. ad valorem; Provided that none of the articles included in this paragraph shall pay less rate of duty than 40 p. c. ad valorem.

Cotton damask, in the piece or otherwise, and all manufactures of cotton not especially provided for in this act, 40 p. c. ad valorem

FLAX, HEMP, AND JUTE, AND THEIR MANUFACTURES.

Flax straw, \$5 per ton.

Flax, not hackled or dressed 1 cent per pound.

Flax, hackled, known as "dressed line," 3 cents per pound.

Tow, of flax or hemp, one-half of 1c. per pound.

Hemp, \$25 per ton; hemp, hackled, known as line of hemp, \$50 per ton.

Yarn made of jute, 35 p. c. ad valorem.

Cables, cordage, and twine (except binding twine composed in whole or in part of istle or tampico fibre, manila, sisal grass or sunn), 1½c. per lb; all binding twine manufactured in whole or in part from istle or tampico fibre, manila, sisal grass or sunn, seven-tenths of 1c. per lb.; cables and cordage made of hemp 2½c per lb.; tarred cables and cordage 3c. per pound.

Hemp and jute carpets and carpetings, 6c. per square yard.

Burlaps not exceeding 60 inches in width, or flax, jute or hemp, or of which flax, jute or hemp, or either of them, shall be the component material of chief value (except such as may be suitable for bagging for cotton), 1½c. per pound.

Bags for grain made of burlaps 2c. per pound.

Bagging for cotton, gunny cloth, and all similar material suitable for covering cotton, composed in whole or in part of hemp, flax or jute butts, valued at 6c. or less per sq. yd., 1 6-10c. per sq. yd.; valued at more than 6c. per sq. yd. 1 8-10c. per square yard.

Oil-cloth for floors, stamped, painted or printed, including linoleum, corticene, cork-carpet, figured or plain and all other oil-cloth (except silk oil-cloth), and water-proof cloth, not specially provided for in this act, valued at 25c or less per sq. yd., 40 p. c. ad valorem; valued above 25c per sq. yd., 15c. per sq. yd. and 30 p. c. ad valorem.

All manufactures of flax or hemp, or of which these substances, or either of them, is the component material of chief value, not specially provided for in this act, 50 p. c. ad valorem; Provided, that until Jan. 1 1894, such manufactures of flax containing more than 100 threads to the square inch, counting both warp and filling, shall be subject to a duty of 35c. p. c. ad valorem in lieu of the duty herein provided.

Collars and cuffs, composed entirely of cotton 15c. per dozen pieces and 35 p. c. ad valorem; composed in whole or in part of linen 30c. per

dozen pieces and 40 p. c. ad valorem; shirts and all articles of wearing apparel of every description, not specially provided for in this act, composed wholly or in part of linen, 55 p. c. ad valorem.

Laces, edgings, embroideries, insertings, neck ruffings, ruchings, trimmings, tuckings, lace window curtains, and other similar tamboured articles, and articles embroidered by hand or machinery, embroidered and hemstitched handkerchiefs, and articles made wholly or in part of lace, ruffings, tuckings or ruchings, all of the above-named articles composed of flax, jute, cotton, or other vegetable fibre, or of which these substances or either of them, or a mixture of any of them is component material of chief value, not specially provided for in this act, 60 p. c. ad valorem: Provided, that articles of wearing apparel, and textile fabrics, when embroidered by hand or machinery, and whether specially or otherwise provided for in this act, shall not pay a less rate than that fixed by the respective paragraphs and schedules of this act upon embroideries of the materials of which they are respectively composed.

All manufactures of jute, or other vegetable fibre, except flax, hemp or cotton, or of which jute, or other vegetable fibre, except flax, hemp or cotton is the component material of chief value, not specially provided for in this act, valued at 5c. per lb. or less, 2c. lb.; valued above 5c. per lb., 40 p. c. ad valorem.

WOOL AND MANUFACTURES OF WOOL.

All wools, hair of the camel, goat, alpaca and other like animals shall be divided for the purpose of fixing the duties to be charged upon them, into the three following classes:

Class one, that is to say, merino, mestiza, metz or metis wools, or other wools of merino blood, immediate or remote, Down clothing wools and wools of like character with any of the preceeding, including such as have been heretofore usually imported into the United States from Buenos Ayres, New Zealand, Australia, Cape of Good Hope, Russia, Great Britain, Canada and elsewhere, and also including all wools not hereinafter described or designated in classes two and three.

Class two, that is to say, Leicester, Cotswold, Lincolnshire, Down combing wools, Canada long wools, or other like combing wools of English blood, and usually known by the terms herein used, and also hair of the camel goat, alpaca and other like animals.

Class three, that is to say Donskoi, native South American, Cordova, Valparaiso, Russian camel's hair, and including all such wools of like character as have been heretofore usually imported into the United States from Turkey, Greece, Egypt, Syria, and elsewhere, excepting improved wools hereinafter provided for.

The duty on wools of the first class which is imported washed, shall be twice the amount of duty imposed on the unwashed wool; and the duty on wools of the first and second classes which is imported scoured, shall be three times the duty imposed if imported unwashed.

Unwashed wools shall be considered such as shall have been shorn from the sheep without any cleansing; that is, in the natural condition. Washed wools shall be considered such as have been washed with water on the sheep's back. Wool washed in any other manner than on the sheep's back shall be considered as scoured wool.

The duty upon all wools and hair of the first class shall be 11c per

lb., and upon all wools or hair of the second class 12c per pound.

On wools of the third class, and on camel's hair of the third class, the value whereof shall exceed 13c per lb., including charges, the duty shall be 32 per cent ad valorem. If the value exceeds 13c per lb. the duty shall be 50 per cent ad valorem.

On woolen and worsted yarns made wholly or in part of wool, worsted or the hair of the camel, goat, alpaca or other animals, valued at not more than 30c per lb., the duty per lb. shall be two and one-half times the duty on unwashed wool of the first class, and in addition thereto 35 p. c. ad valorem; valued at more than 30c and less than 40c per lb. the duty shall be three times that imposed on unwashed wool of the first class, and in addition thereto 35 p. c. ad valorem; valued at over 40c per lb. the duty shall be three and a half times that imposed on unwashed wool of the first class, and in addition 40 p. c. ad valorem.

On woolen or worsted cloths, shawls, knit fabrics, and fabrics made on knitting machines or frames, and all manufactures of every description made wholly or in part of wool, worsted, the hair of the camel, alpaca, goat or other animals not specially provided in this act, valued at not more than 30c per lb. the duty per lb. shall be three times the duty imposed on a lb. of unwashed wool of the first class, and in addition 40 p. c. ad valorem; valued at more than 30c and less than 40c per lb. the duty per pound shall be three and one-half times the duty imposed on a pound of unwashed wool of the first class, and in addition thereto 40 p. c. ad valorem; valued at above 40c per lb., four times the duty on a lb. of unwashed wool of the first class and 50 p. c. ad valorem.

On blankets, hats of wool, and flannels for underwear, composed in part or wholly of wool, valued at not more than 30c per lb., the duty per lb. shall be the same as that imposed on 1½ lb. of unwashed wool of the first class, and in addition 30 p. c. ad valorem; valued at more than 30c and less than 40c per lb., the duty per lb. shall be twice the duty imposed on a pound of unwashed wool of the first class; valued at over 40c and under 50c per lb., the duty per lb. shall be three times that on a pound of unwashed wool of the first class; and in addition thereto upon all of the above named articles 35 p. c. ad valorem. On blankets and hats of wool composed of wool or hair, wholly or in part, valued at over 50c per lb. the duty shall be three and a half times the duty imposed on a lb. of unwashed wool of the first class, and in addition 35 p. c. ad val. Flannels composed wholly or in part of wool or hair, valued at above 50 cts a pound, shall be classified to pay the same duty as dress goods, coat linings, Italian cloths, and goods of similar character and description, provided by this act.

On women's and children's dress goods, coat linings, Italian cloths, and goods of similar character and description of which the warp consists wholly of cotton or other vegetable material, valued at not exceeding 15c per sq. yd, 7c per sq. yd. and in addition thereto 40 p. c. ad val. valued at above 15c per sq. yd., 8c per sq. yard and in addition thereto 50 p. c. ad valorem. Provided, That on all such goods weighing over 4 ounces per square yard the duty per pound shall be four times that on a pound of unwashed wool of the first class and in addition thereto 50 per cent ad valorem.

On women's and children's dress goods and similar fabrics not specially provided for in this act the duty shall be 12c per square yard and

50 p. c. ad valorem. But if such goods weigh over 4 ounces to the sq. yd the duty shall be four times that on a lb of unwashed wool of first class and in addition thereto 50 p. c. ad valorem.

On clothing, ready made, and articles of wearing apparel of every description not specially provided for in this act, and plushes and other pile fabrics, composed wholly or in part of wool the duty per lb. shall be four and one-half times the duty on a pound of unwashed wool of the first class and in addition thereto 60 per cent ad valorem.

On cloaks, dolmans, jackets, ulsters, or other wraps or outside garments composed wholly or in part of wool, the duty per lb. shall be four and one-half times the duty imposed on a lb. of unwashed wool of the first class, and in addition thereto 60 per cent ad valorem.

On webbings, gorings, suspenders, braces, bindings, braids, galloons, fringes, cords and tassels, laces and embroideries, head nets or buttons of any kind made wholly or in part of wool, the duty shall be 60c per pound and in addition thereto 60 p. c. ad valorem.

[FOR TARIFF ON CARPETS, RUGS AND MATS, SEE PAGE 36.]

NEEDLES.

Needles for knitting or sewing machines, chrochet and tape needles and bodkins of metal, 35 p. c. ad valorem.

Needles, knitting and all others not specially provided for in this act, 25 p. c. ad valorem.

BUTTONS AND BUTTON FORMS.

Button forms; Lastings, mohair, cloth, silk or other manufactures of cloth, woven or made in patterns or such size, shape or form, or cut in such manner as to be fit for buttons exclusively, 10 per cent ad valorem.

Buttons, commercially known as agate buttons, 25 per cent ad val.

Pearl and shell buttons $2\frac{1}{2}$ c per line, button measure of one-fortieth of an inch, per gross, and in addition thereto 25 per cent ad valorem.

Ivory, vegetable ivory, bone or horn buttons, 50 per cent ad valorem.

Shoe buttons made of paper, board, papier mache, pulp or other similar material not specially provided for in this act. valued at not less 3c per gross 1c per gross.

LEATHER AND MANUFACTURES OF LEATHER.

Calf skins tanned, dressed upper leather, including patent, japanned and enamelled leather; chamois or other skins not specially enumerated or provided for in this act, 20 p. c. ad valorem; bookbinders' calf skins, kangaroo, sheep and goat skins, including lamb and kid skins, dressed and finished, 20 p. c. ad valorem; skins for morocco, tanned but unfinished, 10 per cent ad valorem; japanned calf skins, 30 p. c. ad valorem; boots and shoes made of leather, 25 per cent ad valorem.

Gloves of all descriptions, composed wholly or in part of kid or other leather, shall pay at the rates fixed in connection with the following specific kinds thereof. 14 inches in extreme length when stretched to the full extent, being in each case hereby fixed as the standard, and 1 dozen pairs as the basis, namely: Ladies' and children's schmaschen of said length or under, \$1 75 per dozen; ladies' and children's lamb of said length or under, \$2 25 per dozen; ladies' and children's kid of said

length or under, \$3 25 per dozen; ladies' and children's suedes, of said length or under, 50 p. c. ad valorem; all other ladies' and children's gloves and all men's leather gloves of said length or under, 50 p. c. ad valorem; all leather gloves over 14 inches in length, 50 p. c. ad valorem, and in addition to the above rates there shall be paid on all men's gloves \$1 per dozen; on all lined gloves \$1 per dozen; on all piqua or prick seam gloves 50c per dozen; on all embroidered gloves with more than three single strands or cords, 50c per dozen pairs. Provided, That all gloves represented to be of a kind or grade below their actual kind or grade shall pay an additional duty of \$5 per dozen pairs. Provided further, That none of the articles mentioned in this paragraph shall pay a less rate of duty than 50 p. c. ad valorem.

MISCELLANEOUS MANUFACTURES.

Feathers and downs of all kinds, not specially provided for in this act 10 per cent ad valorem. Manufactured articles of feathers and down including dressed and finished birds suitable for millinery ornaments, 50 per cent ad valorem.

Furs, dressed on the skin but not made up into articles, and furs not on the skin, prepared for hatters' use, 20 per cent ad valorem.

Glass beads, unthreaded, or unstrung, 10 per cent ad valorem.

Hair cloth, known as crinoline cloth, 8 cents per square yard.

Hair cloth, known as hair seating, 30 cents per square yard.

Hair, curled, suitable for beds and mattresses, 15 p. c. ad valorem.

Manufactures of bone, chip, grass, horn, India-rubber, palm-leaf, straw, weeds or whalebone, not specially provided for in this act, 30 p. c.

Matting made of cocoa-fibre or rattan, 12c per sq. yd.; mats made of same 8c per sq. foot.

Plush, black, known commercially as hatters' plush, composed of silk or silk and cotton, and used exclusively for making men's hats, 10 p. c.

Umbrellas, parasols and sunshades, covered with silk or alpaca, 55 p. c.; if covered with any other material 40 p. c.

Handles for umbrellas, parasols and sunshades, if plain 35 p. c.; if carved, 50 p. c.

FREE LIST.

On and after the 6th day of October, 1890, unless otherwise specially provided for in this act, the following articles when imported shall be exempt from duty:

Bolting cloth, especially for milling purposes, but not suitable for wearing apparel.

Coir and coir yarn.

Cotton and cotton waste, or flocks.

Fans, common palm leaf, and palm leaf unmanufactured.

Floor matting manufactured from round or split straw, including what is commonly known as China matting (old tariff 20 p. c.)

Furs, undressed.

Istle, or Tampico fibre.

Jute and jute butts; manila sisal grass and sunn.

Hides, raw or uncured, whether dry, salted or pickled, Angora goat skins, raw, without the wool, asses' skins, and all other skins, with the wool on, except sheep skins.

India-rubber, crude, and milk of, and old scrap or refuse India-rubber which has been worn out by use and is fit only for remanufacture.

Ivory and vegetable ivory, not manufactured.

Needles, hand sewing and darning.

Silk, raw, or as reeled from the cocoon, but not doubled, twisted or advanced in manufacture in any way.

Whalebone, unmanufactured.

That on and after the first day of March, 1891, all articles of foreign manufacture, such as are usually or ordinarily marked, stamped, branded, or labeled, and all packages containing such or other imported articles, shall respectively, be plainly marked, stamped, branded, or labeled in legible English words, so as to indicate the country of their origin; and unless so marked, stamped, branded, or labeled they shall not be admitted to entry.







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